COMPETENCY BASED ASSESSMENT

MODEL QUESTION PAPERS

Key Stages 4

Department of Curriculum & Professional Development

Ministry of Education

Bhutan Council for School Examinations & Assessment

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FOREWORD

The COVID 19 pandemic has been both ravaging to the lives of people and springboard for numerous ramification of changes in the thinking culture and of doing things differently across face of the earth. The education system is under immense pressure for change in terms of rethinking of meaning and purposes of education for the 21st century learners and the society. This entailed the vigorous rethinking and reformation in education in aligning the curricular initiatives to realizing the aspiration of the Royal Kasho 17th December 2020. The reformation attends to the diverse needs of learners and the society. The prominent school of thought in education that makes educational process dynamic and versatile is competency-based education. Through its experiential learning approach, teachers facilitate learners to generate new knowledge, create new ideas and innovate new things to solve individual's life and society related problems and issues.

The shift in the purpose of education from the knowledge-based learning to competency based education warrants the need for change in the concepts and practices of gauging the learning outcomes of learners. The fundamental areas of competency include intellectual, social, emotional, and physical, informed by the conceptual knowledge and understanding of the learning content. This complex learning outcome is generally manifested during the course of learning; the summative assessment cannot do justice in assessing the holistic learning and development of learners. Therefore, the competency-based education commensurate with the competency based assessment with competency based test items.

As a joint effort of Department of Curriculum and Professional Development (DCPD), and the Bhutan Council for School Examinations and Assessment (BCSEA), sample competency based assessment (CBA) model question papers are developed for all subjects for key stages 2, 3, 4 and 5 for classes 6, 8, 10 and 12. This is mainly to set clarity among teachers on the understanding and practices of competency-based education and competency based assessment implementers, so that the quality of education is ensured by reliable and authentic assessment practices.

This sample CBA booklet provides suggestive use of skills for setting competency based test items across all subjects. Being mindful of assessment to provide equity for learners to demonstrate their capabilities and potentials, diversity in question types and question context is one of the key features. Drawing lessons from how the sample question types are written, it is envisaged that teachers are empowered to develop CBT in their respective subjects for testing their students.

We wish all the teachers and learners an enriching journey of learning.

(Kinga Dakpa)
DIRECTOR GENERAL

INTRODUCTION

The new curriculum grounded on the competency-based education has been implemented from the 2021 academic session. It empowers learners with the intellectual, social, emotional and behavioural competencies and transversal skills for holistic development as nationally rooted and globally competent individuals. It is an attempt to transform the "product" based education to "process" based learning through the pedagogy that emphasizes on learning of "how" than on the teaching of "what".

The Instructional Guide (IG) for the new curriculum is a transformative instruction that facilitates competency-based learning through experiential learning approaches. Learners are engaged in diverse learning experiences of exploration, investigation, analysis, and synthesis to generate new knowledge and create innovative ideas of solving problems and of doing things differently. This approach driven by digital technologies is vital towards bridging the gap between the "classroom" teachings and learning with the "life realities" outside the classroom. It narrows the gap between the taught and learnt knowledge and skills with the immediate challenges and opportunities in their immediate environment and in the world. This makes learners aware and sensitive to the social, political, economic, spiritual and global opportunities and challenges. Concurrently, assessment practices should ensure that learners' performance is assessed objectively with appropriate tools, and gauge the quality of education and relevancy of educational resources. Inevitably, the competency based learning approach necessitates the review and revision of assessment practices and grading system and justify the elements of assessment in practice.

Assessment in our school system consists of formative and summative assessment. While the Continuous Formative Assessment (CFA) is to help learners improve their learning through rigorous authentic assessment and feedback and interventions, examinations are a summative assessment process, where candidates can showcase their in-depth knowledge and proficiency in a given subject or topic. The goal of a summative examination is to evaluate the learner learning at the end of the course, and they could be the end of semester examinations or annual examinations. Other types include, preparatory examination, targeted to those who are scheduled to sit for high stakes examinations.

In order to align the examinations policies and practices with the new curriculum, the examinations practices in terms of weighting and duration of examinations for all key stages are reviewed taking into consideration of learner's age group and individual differences. The common concern and issue of coverage of syllabus due to the decrease in examination writing time is addressed through the CBT items. By the genesis of competency-based assessment, a few competency based test items can gauge wide range of conceptual knowledge, social and physical competencies of students.

Weighting and duration of examinations

Numerous studies reveal that the:

i. lengthy test time may cause subjective fatigue that generally inhibits students in performing well in test, consequently less accurate assessment outcomes.

ii. average number of test, test items, and time are progressive from lower to higher grades.

iii. average international test time for lower grades is equivalent to one instructional time, and one and half hours for higher grades. Internationally, there is an evolving practice of reducing the current test time of maximum three hours to ninety minutes.

iv. international emphasis is on "shorter and fewer" number of test and test items, which can yield equally accurate and quicker test results.

v. average international test questions is five to ten for undergraduate students.

Based on the above premises, the weighting and duration of examinations for key stages 2 and 3 were amended based on the proportion of CFA with the Summative examinations (SA) for the respective key stages. Unit tests or class tests shall be used for diagnostic assessment, and it shall not be deemed as part of the CFA. The paper weighting and duration for key stages 4 and 5, however, remain status quo owing to the mandatory highstakes examinations at the end of these key stages.

Weighting and duration of examinations shall be as the following

Key Stage	Subjects	Written Examination full marks)	Time (Hr)	Conversion Term I (in %)	Conversion Term II (in %)
II	Dzongkha	60	1.5	20	20
	English	60	1.5	20	20
	Mathematics	60	1.5	10	30
	Science	50	1	15	15
	Social Studies	50	1	15	15
	ICT	40	1	10	10
III	Dzongkha I	80	2	30	30
	Dzongkha II	80	2	30	30
	English	80	2	30	30
	Mathematics	80	2	25	35
	Science	70	1.5	20	20
	ICT	50	1.5	10	20
	History	70	1.5	15	25
	Geography	70	1.5	20	20
IV	Dzongkha I	100	3	35	35
	Dzongkha II	100	3	35	35

	English I	100	3	35	35
	English II	100	3	35	35
	Mathematics	100	3	35	35
	ICT	100	2	20	20
	Physics	100	2	30	30
	Chemistry	100	2	30	30
	Biology	100	2	30	30
	History	100	2	25	35
	Geography	100	2	30	30
	Environmental Science	100	2	30	30
	AgFS	100	2	20	20
	Economics	100	2	30	30
	LCSC	100	3	25	45
	TVET Paper I	50	1	5	5
	TVET Paper II	100	3	25	45
V	Dzongkha I	100	3	40	40
	Dzongkha II	100	3	40	40
	English I	100	3	40	40
	English II	100	3	40	40
	Mathematics	100	3	40	40
	ICT	100	3	20	30
	Physics	100	3	35	35
	Chemistry	100	3	35	35
	Biology	100	3	35	35
	History	100	3	30	40
	Geography	100	3	35	35
	Commerce	100	3	30	30
	Accountancy	100	3	35	35
	Media Studies	100	3	30	30
	Environmental Science	100	3	35	35
	AgFS	100	3	25	25
	Economics	100	3	35	35
	Rigzhung (LCSC)	100	3	30	50
	Rigzhung	100	3	40	40
	TVET Paper I	50	1	5	5
	TVET Paper II	100	3	25	45

Examination Test Items

With the main objective of helping teachers in the design and writing of CBT items, subject specialists from the BCSEA and DCPD through consultation developed the CBT items for all subjects for each key stages terminal classes.

The development of sample CBT papers in all subject is informed by the curriculum frameworks and following broad underlying principles:

i. All the test items are CBT based on the concepts and principles of competency based curriculum and assessment.
ii. Question pattern differs across the subjects as informed by the subject nature and the corresponding characteristics.
iii. Understanding that assessment is giving students the opportunity to display their abilities and potential, not as punishment, and that each of them have individual differences in learning style, diversity in question types is emphasized. This is also to uphold the inclusive education principles and the philosophy of education for all.
iv. The development of the CBT items initiate with the drawing up of test blueprint followed by the writing of sample papers aligned with the paper format commonly used by the examination body, e.g. BCSEA.
v. The weighting and duration for writing examination paper are informed by changes made in the above table.
vi. The test items or tasks in the paper are generally contextualized to a wide range of settings.
vii. The CBT items are designed to deploy multiple intellectual, social and physical skills in solving the challenging tasks.
viii. Adopt a thematic approach to writing test items so that maximum conceptual knowledge, skills and values judgment in the subjects are assessed with less number of test items.

MODEL QUESTIONS FOR ALL SUBJECTS FOR THE KEY STAGE 4

DZONGKHA I

ང་རྫོང་དྲི་ཤོག་དང་པའི་དཔྱད།།

བྱི་ནི་དང་སྐད་ཡིག། དུས་ཡུན་ཆུ་ཚོད་༣ ।

སྒོ་བ་རེམ་༡༠ པ། སྐུགས་བསྡོམས་༡༠༠ ।

འོག་གི་བཀོད་རྒྱུ་ཚུ་ལེགས་ཤོམ་སྦེ་ལྟག་སྟེ་བལྟ།

༡. ཉེ་མ་ **སྐར་མ་༡༥** གི་རིང་ལུ་ ཡི་གྱ་མ་བྱེ་བར་དྲི་ཤོག་འདི་ ལེགས་ཤོམ་སྦེ་ལྟག།

༢. དྲི་བ་ལྟག་ཚར་ཞིན་མ་ལས་ ལན་བྱེ་ནི་དོན་ལུ་ དུས་ཡུན་**ཆུ་ཚོད་༣** ཐོབ།

༣. དྲི་ཤོག་འདི་ནང་ལུ་ དྲི་བ་སྟེ་ཚན་**གཉིས**་སྟེ་ཡོད། སྟེ་ཚན་ **ཀ**་ བྱེ་ནི་དང་ སྟེ་ཚན་ **ཁ**་ སྐད་ཡིག་ཨིན།

༤. སྟེ་ཚན་ **ཀ**་ ལུ་ནང་གསེས་གཉིས་ཡོད། དང་པ་**འཕྲོ་རྩོམ**། གཉིས་པ་**ཡིག་འགྲུལ**།

༥. སྟེ་ཚན་ **ཁ**་ ལུ་ནང་གསེས་གཉིས་ཡོད་ དང་པ་**སྐད་ཡིག་གི་འཛུག་པ་དང་**། གཉིས་པ་**ཡི་གུའི་སྒྱིར་བ་ཨིན།**

༦. དྲི་བ་སོ་སོའི་སྐུགས་དེ་ཚུ་ ཁ་གསལ་སྟེ་ **གུག་ཅད་ནང་ལུ**་བཀོད་དེ་ཡོད།

༧. དྲི་བ་རེ་རེ་བཞིན་ཀྱི་ **བཀོད་རྒྱ**་ཁ་གསལ་སྟེ་ བཀོད་ཡོད་མི་ཚུ་ ལེགས་ཤོམ་སྟེ་ལྟག་སྟེ་ ལན་མ་འཛོལ་བར་བྱེས།

༨. དྲི་བའི་ལན་ཚུ་ **མཚོགས་སུ**་ཅིག་སྟེ་བྱེས། དེ་འབདཔ་དང་ ཡིག་བཟོ་བཏོན་ཏེ་ **ཉིངས་རས་ས**་སཱྀ་བྱེ་དགོ།།

༩. དྲི་ཤོག་སོ་སོར་ **ཁ་ཕྱལ་གཏང་ནི**་དང་ ཤོག་ལེབ་**སྟེང་ནི**་ཚུ་འབད་མི་ཆོག།

༡༠. དྲི་ཤོག་འདི་ ཆ་ཚིཆ་བཟོ་ནི་གི་དོན་ལུ་ **ཐིག**་འཐེན་ནི་དང་ **ཚོན་སྐྱུག**་གིས་བྱེ་ནི་ དེ་ལས་ བཀོད་རྒྱ་དང་མ་འཁྲིལ་ བའི་**པར་དང་དོ་རྟགས**་ཚུ་ གཏི་ཡང་བྱེ་མི་ཆོག།

༡༡. ཆོས་རྒྱུགས་ཁང་ནང་ལས་ འཐོན་མ་འགྱོ་བའི་ཉེ་མ་ དྲི་བ་ཚུ་གི་**ལན**་ཚོང་མ་ཚང་ཚུ་ བཏུག་ཞིབ་འབད་དེ་བལྟ།

དབྱེ་ཞིབ་པ་གིས་ སྐུགས་བཀོད་ ཤོག་ཁྲམ།

དོན་ཚན།	སྟེ་ཚན་ཀ། བྱེ་ནི།		སྟེ་ཚན་ཁ། སྐད་ཡིག་དང་ ཡི་གུའི་སྒྱིར་བ།								
དྲི་བ།	འཕྲི་རྩོམ།	ཡིག་འགྱུ་ལུལ།	སྐད་ཡིག་གི་འཛུག་པ།		ཡི་གུའི་སྒྱིར་བ།						
			ཀ)	ཁ)	ཀ)	ཁ)	ག)	ང)	ཅ)	ཆ)	བསྡོམས།
སྐུགས་ཚད།	༡༠	༡༠	༤	༦	༡༥	༡༥	༤	༤	༤	༡༥	༡༠༠
སྐུད་ཐོབ་པ།											

ང་སྟེ་ཚན་ ཀ་ བྱེ་ནི། སྐུགས་༣༠ ।།

འོག་གི་ དོན་ཚན་བཞི་ལས་ གཅིག་གདམ་ཁ་རྩབ་སྟེ་ ཚིག་འགྲུ་༡༥༠ ལས་ ༩༠༠ གི་ནང་འཁོད་འབད་མི་ རྒྱུད་སྐུལ་ འཕྲི་རྩོམ་ཅིག་བྱིས།

དན་གསོ། ཞོད་ཀྱི་འཕྲི་རྩོམ་འདི་ དྲི་བ་དང་འཁྲིལ་ཏེ་ ནང་དོན་ཨོག་ཏིང་དང་ ཚིག་གོ་རིམ་སྒྲིག་ཐབས་ ཚིག་གི་སྟན་ཆ་ཡི་ཀུའི་སྟེབ་སྒྲོར་དང་ འཕྲི་བཀོད་ཚུ་ལུ་གཞི་བཞག་སྟེ་ སྐུགས་ཉིན་ནི་ཞིན། ནང་དོན་མ་ཨོག་པ་ཅིན་ སྐུགས་མི་ཐོབ།

ཀ) སེམས་ཅན་གར་ རང་གི་ཨམ་ཞིནམ་ལས་ དེ་ཚུ་ལུ་སྙིང་རྗེ་བསྒོམ་དེ་ སོག་གཅོད་འབད་ནི་འདི་ སྤང་དགོ་པ་གལ་ཆེ་བའི་སྐོར་ལས་བྱིས།

ཁ) སྡུམ་འཁོར་གཏུང་མི་ཚུ་གིས་ ཆངདང་སྒྲོ་རྩས་ལག་ལེན་འཐབ་པ་ཅིན་ མི་མང་གི་ཚེ་སོག་ལུ་ གནོད་པ་སྒོམ་ ཡོད་པ་ལས་ ཆངདང་སྒྲོ་རྩས་ སྤང་དགོ་པའི་སྐོར་ལས་བྱིས།

ག) ཨ་བཟང་གི་བྱུ །ཀྱི་བཟངགི་ཤུབས། །ཟེར་བའི་དམྱེ་གཏམ་འདི་ལུ་གཞི་བཞག་སྟེ་ རངཡང་ སློབ་ཁྲག་ཅིག་ ཞིན་པའི་ཆ་ལས་ རྒྱུད་ལུ་སྒྲོད་ལམ་བཟངཡོ་ བསྟེན་དགོ་པའི་སྐོར་ལས་བྱིས།

ང) ཆུང་ཆེ་ཤད་ཐང་ སྒོམ་ཆེ་མི་གྲལ་བཙུགས་མི་ དྲིན་ཅན་ཨམ་གཉིས་ཞིནམ་ལས་ དེ་ལུ་ བཀའ་དྲིན་བསམས་ཏེ་ ཞབས་ཀྱོག་ག་དེ་དྲག་དྲག་ཞུ་དགོ་པའི་ སྐོར་ལས་བྱིས།

འོག་གི་ དོན་ཚན་གསུམ་ལས་ གཅིག་གདམ་ཁ་རྩབ་སྟེ་བྱིས།

ཀ) ཁྱོད་ རྩི་རང་ལས་ ཀུན་ལྡན་ཤེར་པ་ཞིན་མ་བཟོ་སྟེ་ ལུ་གཡོག་ཅིག་ གནང་དགོ་པའི་སྐོར་ལས་ ལུ་གཡོག་ ལས་ཁུངས་ཀྱི་མདོ་ཆེན་ལུ་ དེང་སང་གི་ལམ་ལུགས་ལྟར་དུ་ དོན་མཚམས་ནང་འཇེན་ཐུ་ ཞུ་ཡིག་ཅིག་བྱེས།

ཞུ་ཡིག་ནང་ལུ་འོག་གི་གནད་དོན་ཚུ་བཙུགས་དགོ

- དཔེ་ཆ་ལྟར་ས་འགྲམ་ཕྱག་འབྲིང་རིམ་སློབ་གྲྭ་བར་མ།
- སྤྱི་ལོ་༢༠༢༣ ལུ་སློབ་རིམ་༡༠ པ་མཐར་འཁྱོལ་ཡོད་པ།
- ལུ་གཡོག་ནང་ལུ་འཛུལ་དགོ་པའི་གནད་དོན་ཁ་གསལ།

ཁ) ཁྱོད་བློ་བ་ཞིན་བཟོ་སྟེ་ ཁྱོད་རའི་ཆ་རོགས་འཚམ་ཤོས་ཅིག་ཞིན་མི་ དེ་རྩམ་ཉིམ་ཟེར་མི་དེ་གིས་ ཁྱོད་ལས་ བློ་ངོ་༡ གི་ནང་འཁོད་ལོག་སྤྱོད་གེ་ཟེར་ དངུལ་གྲམ་༡༠༠.༠༠༠ འབུམ་གཅིག་ བསྒྱིས་འབག་པའི་ཤུལ་ལུ་ ལོ་༢ ལྷག་སོ་རྒྱངས་ཀྱི་ཚབ་སྤྱོད་མ་བཏུབ་པའི་སྐོར་ལས་ ཁེམས་འདུན་ལུ་བཤེར་ཡིག་གཅིག་བྱེས།

བཤེར་ཡིག་ནང་ འོག་གི་གནད་དོན་ཚུ་ ཚུད་དགོ།

- རྩ་ཐན་གཉིས་ཀྱི་ངོ་སྤྲོད་ཁ་གསལ།
- གནད་དོན་གཅིག་ཅི་ལས་བརྟེན་ཏེ་ བསྒྱིས་འབག་ཅི་ག?
- དངུལ་བསྒྱིས་འབག་ཡོད་པའི་སྒྲུབ་བྱེད་ཁ་གསལ།
- ཁོ་གིས་སྒྱིན་ཚབ་སྤྱོད་མ་བཏུབ་པའི་རྒྱུ་ཁུངས་ཁ་གསལ།
- དངུལ་བསྒྱིས་འབག་ཡོད་པའི་བློ་ཚེས།

ག) བཀའ་ཤིས་གཡང་རྩེ་རྫོང་ཁག་ སྟོང་ཞང་རྒེད་འོག་ གཡུས་ བསམ་གྲིང་ལས་ ངོ་སྤྲོད་ལག་ཁྱེར་ཞང་ ༡༡༤༠༠༠༧༤༢༣ ཅན་མ་འཆང་མི་ བསོད་ནམས་བསྟན་འཛིན་དང་། མོང་སྐར་རྫོང་ཁག་ གཡུས་རི་ཆང་ལུ་ལས་ ངོ་སྤྲོད་ལག་ཁྱེར་ཞང་༡༠༤༠༠༦༠༧༢༣ ཅན་མ་འཆང་མི་ ཀུན་བཟང་སྤྲོལ་མ་བཟའ་ཚང་གཉིས་ རྒྱན་དན་ཅིག་གིས་འབད་ གནས་སྐབས་ཅིག་ མ་འགྲིགས་པར་ ཡོད་མི་འདི་ རྐོ་གིས་ སྤྲིག་ཆ་བཟོ་ཡོད་པའི་སྐོར་ལས་ གན་རྒྱ་ཅིག་བཟོ།

གན་རྒྱ་ནང་ འོག་གི་གནད་དོན་ཚུ་ ཚུད་དགོ།

- མ་འགྲིགས་པའི་གནད་དོན་ཁ་གསལ།
- བསོད་ནམས་བསྟན་འཛིན་ཀྱི་རྒྱུབ་མི་ ཡོ་ན།
- ཀུན་བཟང་སྤྲོལ་མ་གི་རྒྱུབ་མི་ བདེ་ཆེན།

ཞ་སྡེ་ཚན་ ཁ་ སྐད་ཡིག་དང་ཡི་གེའི་སྤྱོད་བ། སྐུགས་ ๒๐ །།

དྲི་བ་གསུམ་པ། **སྐད་ཡིག་གི་འཛུག་པ།** **[๓๐]**

ཀ) **འོག་གི་ དྲི་བ་ཚུ་གི་ ལན་བྱེས།** **[๘]**

๑. “འཕྲི་གླེག་སྒྲ་དང་རིག་པའི་གཞི་བཟུང་ནས།།” ཟེར་བའི་སྐབས་ སྐད་ཡིག་གི་རིག་རྩལ་ འཐོབ་ནི་གི་གཞི་གཱ་ཅི་ར་ཨིན་པས་གོ? གཉིས་ངོས་འཛིན་འབད་དེ་བྱེས། [๔]

๒. གཞན་ལུ་ བརྡ་དོན་སྤྲོད་ལེན་འབད་ནིའི་དོན་ལུ་ སྐད་ཡིག་ཆུངམ་གཅིག་ཨེན་པར་ ཐབས་ཤེས་གཞན་གཅི་ར་ཡོད་པ་སྟོ? གཉིས་ཐོ་བཀོད་འབད། [๔]

๓. ངའཆས་རའི་ ཆུལ་ཁབ་ནང་ ཨིངལིཤ་གི་སྐད་ཡིག་འདི་ ལྷབ་དགོས་འདུག་གམ? གཅི་སྟེ? [๔]

ཁ) **འོག་གི་དྲི་བ་རེ་ལུ་ ལན་ ཀ་ཁ་གཅ་ང་ཹ རེ་ཡོད་ས་ལས་ ལན་ངོམ་གཅིག ཡོད་ཚི་འདི་ གདམ་ཁ་ཆུབ་སྟེ་ ཀ་ཏུགས་གུ་ ○ སྐོང་ཐིག་ དེ་བཟུམ་བཀལ།** **[๗x๒=๑๔]**

๑. “བསླབ་པ་ཀུན་གྱི་གཞི་འཛིན་ཅིང།། རིག་བྱེད་སྒྲ་བ་རྣམས་ཀྱི་རྒྱུ།།” ཟེར་མི་རྩ་ཚིག་འདི་

ཀ སྤྱོད་འཇུག་ནང་ལས་ཨིན།

ཁ བཤེས་སྦྱིངས་ནང་ལས་ཨིན།

ག རྒྱལ་སྤས་ལགཀ་ལེན་ནང་ལས་ཨིན།

ང ལུང་སྟོན་པ་རྩ་བ་སུམ་རྩེ་བའི་ནང་ལས་ཨིན།

༢. སྤྱིར་བཏང་ སྐད་ཡིག་ ཅེར་མི་འདི་

ཀ མི་དང་མི་གི་བར་ན་བརྟ་དོན་སྦྲེད་ལེན་འབད་མི་ལུ་སྨན་ཨིན།

ཁ མི་དང་ཅ་ལ་གི་བར་ན་བརྟ་དོན་སྦྲེད་ལེན་འབད་མི་ལུ་སྨན་ཨིན།

ག མི་དང་མི་མ་ཡིན་གྱི་བར་ན་བརྟ་དོན་སྦྲེད་ལེན་འབད་མི་ལུ་སྨན་ཨིན།

ང མི་དང་སེམས་ཅན་གྱི་བར་ན་བརྟ་དོན་སྦྲེན་ལེན་འབད་མི་ལུ་སྨན་ཨིན།

༣. "ང་བཅས་རའི་རྒྱལ་ཁབ་ ཆུང་ཀུ་ཅིག་ལས་བརྒལ་མེད་མི་འདི་ནང་ལུ་ མི་མང་གཅིག་མཐུན་སྒྲིང་སྒྲིང་བཟོ་
ནི་འདི་ གནའ་བ་གལ་ཆེ།" ཅེར་བའི་སཱ་བས་ མི་མང་གཅིག་མཐུན་ སྒྲིང་སྒྲིང་བཟོ་ནི་ ཅེར་མི་འདི་གི་ར་

ཀ རིག་རྩལ་ཅན་བཟོ་ནི་ཅེར་བའི་དོན་ཨིན་པས།

ཁ མནོ་ཐངས་ལེགས་ཤོམ་བཟོ་ནི་ཅེར་བའི་དོན་ཨིན་པས།

ག མཐུན་ལམ་ལེགས་ཤོམ་བཟོ་ནི་ཅེར་བའི་དོན་ཨིན་པས།

ང བྱོ་ལེགས་ཤོམ་སྨན་ཤེས་པ་བཟོ་ནི་ཅེར་བའི་དོན་ཨིན་པས།

༤. འབྲུག་རྒྱལ་ཡོངས་ཀྱི་སྐད་ཡིག་ལུ་ མིང་གཞན་རྫོང་ཁ་ཅེར་ སྨན་དགོ་པའི་རྒྱུ་ཚན་འདི་

ཀ སྤྲོད་གྲྭ་ཁག་ནང་ལུ་ལག་ལེན་འཐབ་ནི་འདི་གིས་ཨིན།

ཁ རྫོང་གཞིས་ཁག་ནང་ལུ་ལག་ལེན་འཐབ་ནི་འདི་གིས་ཨིན།

ག ལུ་གཡོག་གི་སྐད་ཡིག་འབད་ལག་ལེན་འཐབ་ནི་འདི་གིས་ཨིན།

ང ནུབ་ཕྱོགས་ཀྱི་རྫོང་ཁག་བརྒྱད་ནང་ལུ་ལག་ལེན་འཐབ་ནི་འདི་གིས་ཨིན།

དྲི་བ་བཞི་པ། **ཡི་གུའི་སྦྱོང་བ།** **[༦༠]**

ཀ) འོག་གི་ དྲི་བ་རྩུ་གི་ ལན་བྱིས། **[༡༥]**

༡. སྨོན་ཚིག་ལུ་ དབྱེ་བ་གི་དེམ་ཅིག་ཡོད་? རེ་རེ་བཞིན་བྱིས། [༣]

༢. ཅིད་འཐེལ་བྱ་ཚིག་དང་ ཅིད་མེད་ལས་ཚིག་གཉིས་ཀྱི་ ཁྱད་པར་བྱིས། [༣]

๓. སྒོན་ཆོག་འདི་ དུས་མ་འོངས་པ་འབད་ བྱེ་དགོ་པའི་ ཁུངས་བྱེས། [๓]

๔. སྔོན་ཇོན་རྒྱལ་བ་གོངམ་ཚུ་གིས་ འོག་མ་གིས་གོངམ་ལུ་ ཞེ་སའི་ཆོག་ ལག་ལེན་འཐབ་དགོ་པ་སྟེ་ གསུངས་བཞག་ནུག། དེ་སྟེ་ལག་ལེན་འཐབ་དགོ་མི་འདི་ ག་ཅི་སྟེ་ཞིན་ན? ཁུངས་བཀལ། [๓]

๕. ང་བཅས་རའི་ འཚུག་པའི་ལམ་སྟོལ་ནང་ལུ་ བློ་སྤྲབ་པའི་སྐབས་ལུ་ ཡར་གོང་མ་ལུ་ཞེ་སའི་ཆོག་ ལག་ལེན་འཐབ་དགོ་པ་སྟེ་ཞིན་པས་ དེ་འབདཝ་ཡ་ད་ ཚོང་ཀྱིས་དུས་རྒྱུན་ ལག་ལེན་འཐབ་ནི་ལུ་ སྤྲལས་བའི་ ཏོག་ཏོ་ཅིག་འདུག་གི? ག་ཅི་སྟེ? [๓]

๗) འོག་གི་ དྲི་བ་ཚུ་གི་ ལན་བྱེས། **[๑๔]**

๑. **བའེ། སྤུག། རྐུད།** ཟེར་མི་གསུམ་ ལག་ལེན་འཐབ་སྟེ་ དམོད་ཆོག་ལུ་འཛུག་པའི་ དཔེར་བརྗོད་རེ་རེ་ རྐྱབ། [๓]

๑. འོག་གི་ཞལ་ཆོག་ཚུ་ ཞེ་སའི་ཆོག་ནང་བསྒྲུངས་ཏེ་ སཱ་སྟོང་ཡོད་སང་བྱིས། [๓]

(ཞལ་ཆོག)	(ཞེ་སའི་ཆོག)	
๑- ངོ་ཚབ།		
๒- མི་སྒོམ།		
๓- ལྟ་ཤོར།		

๒. བདག་སྒྲུ་གི་ཕྱད་ **ཡ། ཡོ། ཨ།** གསུམ་ལག་ལེན་འཐབ་སྟེ་ དཔེར་བརྗོད་རེ་རེ་རྐྱབ། [๓]

๙. **ཅིག**་གི་སྒྲ་ གྲངས་ཚད་ དེས་མེད་ཀྱི་དོན་ལུ་འཛུག་པའི་ དཔེར་བརྗོད་๓ བྱིས། [๓]

๔. བྱེད་མེད་ལས་ཆོག་གི་ དཔེར་བརྗོད་๓ བྱིས། [๓]

ག) **འོག་གི་ཏྲི་བ་རེ་ལུ་ ཨན་ ཀ་ཁ་ག་ང་ཉ རེ་ཡོད་ས་ལས་ ཨན་དོ་མ་གཅིག ཡོད་མི་འདི་ གདམ་ཁ་རྐྱབ་ སྟེ་ ཀ་ཏུགས་ཀུ་ སྒོར་ཐིག་ ○ དེ་བཟུམ་བཀལ།** [๑x๔=๔]

๑. བྱེད་པ་པོ་དང་མ་འབྱེལ་བའི་ ལས་ཆོག་ལུ་ མིང་གཞན་

ཀ) ཆེད་མེད་བྱ་ཚོགས་ཟེར་སྒྲབ་ཨིན།

ཁ) ཆེད་མེད་སྐུལ་ཚོགས་ཟེར་སྒྲབ་ཨིན།

ག) ཆེད་མེད་འདས་ཚོགས་ཟེར་སྒྲབ་ཨིན།

ང) བྱ་ཆེད་ཐ་མི་དད་པའི་ཚོགས་ཟེར་སྒྲབ་ཨིན།

༢. སྐབས་དོན་ཆ་ཚང་རེ་ཞུ་ཐངས་ཀྱི་ཁྱད་པར་ཅི་ཡིན་ཞུ།

ཀ) བརྗོད་པ་ཀུངཔ་ཟེར་སྒྲབ་ཨིན།

ཁ) བརྗོད་པ་ཆ་ཚང་བ་ཟེར་སྒྲབ་ཨིན།

ག) བརྗོད་པ་སྟ་འདུས་ཟེར་སྒྲབ་ཨིན།

ང) ཚོགས་བཅད་ཀྱི་བརྗོད་པ་ཟེར་སྒྲབ་ཨིན།

༣. དམོད་ཚོག་ ཟེར་སྒྲབ་དགོ་མི་འདི་

ཀ) ངན་སེམས་ཀྱི་ཐོག་ལས་སྨོན་ལམ་བཏབ་པའི་ཚོག་ལུ་སྒྲབ་ཨིན།

ཁ) བཟོད་སེམས་ཀྱི་ཐོག་ལས་སྨོན་ལམ་བཏབ་པའི་ཚོག་ལུ་སྒྲབ་ཨིན།

ག) ཞེངས་སེམས་ཀྱི་ཐོག་ལས་སྨོན་ལམ་བཏབ་པའི་ཚོག་ལུ་སྒྲབ་ཨིན།

ང) ཁྱོ་བའི་སེམས་ཀྱི་ཐོག་ལས་སྨོན་ལམ་བཏབ་པའི་ཚོག་ལུ་སྒྲབ་ཨིན།

༤. ཞེ་སའི་ཚོག་ཚུ་ ཡྭབ་དགོ་པའི་ཁྲིངས་

ཀ) མི་སྤེའི་ལམ་ལུགས་ནང་ ཞེ་ས་ཞུ་ཐངས་ཤེས་ཚུགས་ཐབས་ལུ།

ཁ) དུས་རྒྱ་ཚར་རྒྱུན་དུ་ལག་ལེན་འཐབ་ཚུགས་ཐབས་ལུ།

ག) ཆོས་ཐྱོགས་ཀྱི་ལས་རིམ་ནང་ཁག་ཆེ་ཞི་འདི་གིས་ཨིན།

ང) མི་ཆེ་ནང་ཁག་ཆེ་ཞི་འདི་གིས་ཨིན།

༥. རྒྱལ་ཡོངས་སྐད་ཡིག་འདི་ ང་བཅས་ར་ དཔལ་ལྡན་འབྲུག་པའི་རྒྱལ་ཁབ་འདི་ནང་གི་ འབྲུག་མི་ ཆེ་འཕེང་ཆུང་གསུམ་གར་གིས་ ལྷབ་སྦྱང་འབད་དགོ་པའི་ཁྲིངས་འདི།

ཀ) ཁག་ཆེ་བའི་ལམ་སྲོལ་དང་ཅོ་རྒྱས་ཅིག་ཨིན་ལས་བརྗེན་ཨིན།

ཁ) གོ་བརྡ་སྦྲོད་ཞིའི་ཐབས་ལམ་ཅིག་ཨིན་ལས་བརྗེན་ཨིན།

ག) མེད་ཐབས་མེདཔ་ཅིག་ཨིན་ལས་བརྗེན་ཨིན།

ང) གལ་ཆེ་ཤོས་ཅིག་ཨིན་ལས་བརྗེན་ཨིན།

༥) འོག་གི་ སྐེ་ཚན་ ཀ་དང་ཁ་ མཐུན་སྒྲིག་འབད་དེ་ ཀ་རྒྱས་ སར་སྟོང་ནང་བྱིས། [ʒx५=५]

(ཀ)	(ཁ)	

༡- ཅན་དན་གྱི་ཤིང་འགྱེལ།	ཀ) སྨོན་ཚིག།	
༢- འཁོར་བ་ལས་ཐར་བཙུག་ཅིག།	ཁ) དམོད་ཚིག།	
༣- ཞན་པའི་གྲས་ཁར་ཚུད་བཙུག་ཅིག།	ག) བརྗོད་པ་ཆ་ཚང་།	
༤- ངགིས་ ལྷོ་བཟའ་ཞིན་ལས་ དེས་ཆ་ཡང་སྐྱབ་ཅི།	ང) བྱེད་ལེད་ལས་ཚིག།	
༥- ང་ནངས་པ་ བགྲིས་སྐྱང་ལུ་ ཐམ་འཕྲད་པར་འགྱོ་ནི།	ཅ) བྱེད་འབྲེལ་ལས་ཚིག།	
	ཆ) བརྗོད་པ་སྐྱ་འདུས།	

ལན།

(ཀ)	(ཁ)	
༡- ཅན་དན་གྱི་ཤིང་འགྱེལ།		
༢- འཁོར་བ་ལས་ཐར་བཙུག་ཅིག།		
༣- ཞན་པའི་གྲས་ཁར་ཚུད་བཙུག་ཅིག།		
༤- ངགིས་ ལྷོ་བཟའ་ཞིན་ལས་ དེས་ཆ་ཡང་སྐྱབ་ཅི།		
༥- ང་ནངས་པ་ བགྲིས་སྐྱང་ལུ་ ཐམ་འཕྲད་པར་འགྱོ་ནི།		

ཅ) འོག་གི་ཐིག་ཁྲམ་ **ཀ**་ནང་གི་མིང་ཚིག་དང་ འབྲེལ་བ་ཡོད་མི་ ཐིག་ཁྲམ་**ཁ**་ནང་ལུ་ ཡིག་སྟེབ་མ་འདྲཔ་ གསུམ་ཡོད་ས་ལས་ ངོམ་གཅིག་ཡོད་མི་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ སྐོར་ཐིག་ ○ དེ་བཟུམ་བཀལ། **[ཅ]**

(ཀ)	(ཁ)		
༡. ངལ་·····	ཚོ།	འཚོ།	མཚོ།
༢. ཆུ·····	འཐུང་	ཐུངས།	ཐུང་
༣. ལམ·····	ཐྱོ།	ཐྱོ།	འཐྱོ།
༤. སེམས·····	དགའ།	བགའ།	འགའ།
༥. གཟུགས·····	ཁྱུ	འཁྱུ	ཁྱུ

ཆ) འོག་གི་ དྲི་བ་ཚུ་གི་ ལན་བྱིས། **[༡༤]**

༡. འོག་གི་ མིངཚིག་ཚུ་གི་ གོ་དོན་ ས་སྟོང་ནང་བྱིས། [ཅ]

๓- འགྲུབ།	
๔- སྤྱོད།	
๕- སྤྲུང།	
๖- བསྒྱིས།	
๗- བཞུ།	

๙. འོག་གི་ཚིག་ཤད་རེ་རེ་གི་ནང་ལུ་ སྟེབ་འཛོལ་བ་རེ་རེ་ཡོད་མི་ཚུ་ བཅོ་ཁ་རྐྱབ་སྟེ་ ས་སྡོང་ནང་བྱིས། [๔]

(སྟེབ་འཛོལ་བ་ཡོད་པའི་ཚིག་ཤད་)	(སྟེབ་དོན)
๓- ཆོས་སྲིད་ལུགས་གཉིས་དན་པའི་སྤྲོངས།།	
๔- གྲལ་བརྒྱད་རིམ་འབྱོན་དབུ་ཁྱེད་ཀྱིས།།	
๕- ཕྱི་ཡི་སྒྲ་ཆོགས་ཟིལ་གྱིས་གཏོན།།	
๖- ནང་གི་བང་རྩམས་བདེ་བར་སྐྱོང།།	
๗- སངས་རྒྱས་སྤྲན་པ་གོང་དུ་སྤེལ།།	

๑๐. འོག་གི་ཐིག་ཁྲམ་ནང་ དངོས་པོའི་ཞེ་ས་དང་ བྱ་ཚིག་གི་ཞེ་ས་གཉིས་བསྡོམས་སྟེ་๑๑ ཡོད་པའི་ནང་ལས་๑๐ སོ་སོ་སྟེ་དོས་འཛིན་ འབད་ཞིན་ན་ ས་སྡོང་བཞག་སྟེ་ཡོད་མི་ སྟེ་ཚན་ནང་བྱིས། [๔]

དབུ་འཁོར། ཚབ་ཚུ། ཡང་སྙིད། ཞལ་སྐོམ། གདུང་རྒྱུད། ན་བཟའ། ཞལ་བསིལ། ཐུགས། སྐུ་ཁྲེས་གནད། སྐུ་ན་བཟེས། ཡོན།

ལན།

ཚང་	ཀ) དངོས་པོའི་ཞེ་ས།	ཁ) བྱ་ཚིག་གི་ཞེ་ས།
๑.		

২.		
৩.		
৬.		
৭.		

བཀྲ་ཤིས་བདེ་ལེགས།

ཁ་རྩོང་བའི་ཤོག་དངས།

ཟླ་ཞེ་དང་སྐད་ཡིག། **དུས་ཡུན་ཆུ་ཚོད་༣ ।**

སློབ་རིམ་༡o བ། **སྐུགས་བསྟོམས་༡oo ।**

འོག་གི་བཀོད་རྒྱ་ཚུ་ལེགས་ཤོམ་སྦེ་ལྟག་སྟེ་བལྟ།

༡. རེ་མ་ **སྐར་མ་༡༥** གི་རིང་ལུ་ ཡི་གུ་མ་བྱེ་བར་དུ་ཤོག་འདི་ ལེགས་ཤོམ་སྦེ་ལྟག།

༢. ངེ་བ་ལྟག་ཚར་ཞིནམ་ལས་ ཁན་ཟེ་ནེའི་དོན་ལུ་ དུས་ཡུན་**ཆུ་ཚོད་༣** ཐོབ།

༣. ངེ་ཤོག་འདི་ནང་ལུ་ ངེ་བ་སྟེ་ཚན་**གཉིས་**སྦེ་ཡོད། སྟེ་ཚན་ **ཀ་** བྱེ་ནི་དང་ སྟེ་ཚན་ **ཁ་** སྐད་ཡིག་ཞིན།

༤. སྟེ་ཚན་ **ཀ་** ལུ་ནང་གསེས་གཉིས་ཡོད། དང་པ་**འབྱི་རྩོམ།** གཉིས་པ་**ཡིག་འགྱུལ།**

༥. སྟེ་ཚན་ **ཁ་** ལུ་ནང་གསེས་གཉིས་ཡོད་ དང་པ་**སྐད་ཡིག་གི་ཁ་ཐུད་རྣམ།** གཉིས་པ་**ཡི་གུའི་སྒྱིར་བ།**

༦. ངེ་བ་སོ་སོའི་སྐུགས་དེ་ཚུ་ ཁ་གསལ་སྟེ་ **གུག་ཤད་ནང་ལུ་**བཀོད་དེ་ཡོད།

༧. ངེ་བ་རེ་རེ་བཞིན་གྱི་ **བཀོད་རྒྱ་**ཁ་གསལ་སྟེ་ བཀོད་ཡོད་མི་ཚུ་ ལེགས་ཤོམ་སྟེ་ལྟག་སྟེ་ ལན་མ་འཛོལ་བར་བྱེས།

༨. ངེ་བའི་ལན་ཚུ་ **མཐུགས་སུ་**ཅེག་སྟེ་བྱེས། དེ་འབདཝ་ད་ ཡིག་བཟོ་བཏོན་ཏེ་ **ཉིངས་ཤད་ས་**ས་ཐུ་ཅེ་བྱེ་དགོ།

༩. ངེ་ཤོག་སོ་སོར་ **ཁ་ཕྱལ་གཏན་ནི་**དང་ ཤོག་ལེབ་**སྟེང་ནི་**ཚུ་འབད་མི་ཆོག།

༡o. ངེ་ཤོག་འདི་ ཐུ་ཚིཆི་བཟོ་ནི་གི་དོན་ལུ་ **ཐིག་**འཐེན་ནི་དང་ **ཚོན་སྐྱུག་**གིས་བྱེ་ནི་ དེ་ལས་ བཀོད་རྒྱ་དང་མ་འཁྲིལ་བའི་ **པར་དང་དོ་རྟགས་**ཚུ་ གཏི་ཡང་བྱེ་མི་ཆོག།

༡༡. ཆོས་རྒྱུགས་ཁང་ནང་ལས་ འཐོན་མ་འགྱོ་བའི་ཉེ་མ་ ངེ་བ་ཚུ་གི་**ལན་**ཚང་མ་ཚང་ཚུ་ བརྟག་ཞིབ་འབད་དེ་བལྟ།

དབྱེ་ཞིབ་པ་གིས་ སྐུགས་བཀོད་ ཤོག་ཁྲམ།

	སྟེ་ཚན་ཀ་ཡི་ཞི།		སྟེ་ཚན་ཁ་ སྐད་ཡིག་དང་ ཡི་གུའི་སྒྱིར་བ།								
ངེ་བ།	འབྱི་རྩོམ།	ཡིག་འགྱུལ།	སྐད་ཡིག་གི་ཁྱད་རྣམ།		ཡི་གུའི་སྒྱིར་བ།						
			(ཀ)	(ཁ)	(ཀ)	(ཁ)	(ག)	(ང)	(ཅ)	(ཆ)	བསྡོམས།
སྐུགས་ཚད།	༤o	༡o	༦	༩	༡༥	༡༥	༥	༥	༥	༡༥	༡oo
སྐྱུར་ཐོབ་པ།											

ཁ་སྟེ་ཚན་ ཀ་ ཐི་ཀི། སྒྲུགས་༩ ।།

དྲི་བ་དང་པ། **འཐི་རྩོམ།** [༡༠]

འོག་གི་ དོན་ཚན་བཞི་ལས་ **གཅིག་གདམ་ཁ་རྒྱབ་སྟེ་** གནས་ཚད་དང་འཁྲིལ་བའི་ འཐི་རྩོམ་ ཆོག་འགྲུ་༣༥ ལས་ ༤༠༠ གི་ནང་འཚོད་འབད་མི་ཅིག་ཐེས།

(སློབ་རིམ་གྱི་གནས་ཚད་དང་འཁྲིལ་བའི་ འཐི་རྩོམ་གྱི་དཔེ་བ་ཚུ་ལས་ དྲི་བ་ ཅ་ བཀོད་ཞིནམ་ལས་ འཐི་རྩོམ་གཅིག་ གདམ་ཁ་རྒྱབ་སྟེ་ ཐེ་ནི་ དྲི་བ་བཀོད་དགོ།)

དྲི་བ་གཉིས་པ། **ཡིག་འགྱུལ།** [༡༠]

(གནས་རིམ་དང་འཁྲིལ་བའི་ ཡིག་འགྱུལ་གྱི་དཔེ་བ་ཚུ་ལས་ དྲི་བ་གདམ་ཁ་ ༣ ཐིན་ཞིནམ་ལས་ གཅིག་གདམ་ཁ་རྒྱབ་སྟེ་ ཐེ་ནི་ དྲི་བ་བཀོད་དགོ)

ཁ་སྟེ་ཚན་ ཁ ཤད་ཡིག་དང་ཡི་གུའི་སྦྱོང་བ། སྒྲུགས་༧༠ ।།

དྲི་བ་གསུམ་པ། **ཤད་ཡིག་གི་ཚད་ནམ།** [༡༠]

ཀ) འོག་གི་ དྲི་བ་༣ ཐྱི་ལན་ཐེས། (༡x༣=༦)

(ཤད་ཡིག་སྦྱི་ཞི་ཁུངས་དང་དགོས་པ། ལྷག་པར་དུ་ རྩོང་ཁའི་ཤད་ཡིག་གི་ཁུངས་དང་དགོས་པ། རྩོང་ཁའི་ཤད་ཡིག་ནང་ལུ་ མིང་ཆོག་གི་ སྦྱོར་བ་ འཛོལ་ཉེ་སྐྱབ་ནི་དང་ མ་དག་པ་སྦེ་སྐྱབ་ནི། ཞེ་ས་ལག་ལེན་འཐབ་ཐངས་ཀྱི་འཛོལ་བ། ཁུད་ཆོག་ལག་ལེན་འཐབ་ཐངས་ཀྱི་འཛོལ་བ། མིང་ཆོག་ལག་ལེན་འཐབ་ཐངས་ཀྱི་འཛོལ་བ་ཚུ་ དབྱེ་དཔྱད་འབད་དེ་ ལེགས་བཅོས་འབད་ནི་ སྒྲུགས་གཉིས་རེ་འབད་མི་ དྲི་བ་ ༣ བཀོད་དགོ།

ཁ) འོག་གི་ དྲི་བ་རེ་ལུ་ལན་ ཀ་ཁ་ག་ང་ རེ་ཡོད་ས་ལས་ ལན་དོན་ཚ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྐྱས་གུ་ སྐོར་ཐིག་ ○ དེ་བཟུམ་བཀལ། (༡×༩=༩)

(ཤད་ཡིག་སྦྱི་ཞི་ཁུངས་དང་དགོས་པ། ལྷག་པར་དུ་རྩོང་ཁའི་ཤད་ཡིག་གི་ཁུངས་དང་དགོས་པ། རྩོང་ཁའི་ཤད་ཡིག་ནང་ལུ་ མིང་ཆོག་གི་སྦྱོར་བ་ འཛོལ་ཉེ་མ་དག་པ་སྦེ་སྐྱབ་ནི། ཞེ་ས་ལག་ལེན་འཐབ་ཐངས་ཀྱི་འཛོལ་བ། ཁུད་ཆོག་ལག་ལེན་འཐབ་ཐངས་ཀྱི་འཛོལ་བ་ཚུ་ མ་འཛོལ་བར་ལག་ལེན་འཐབ་ཚུགས་མི་ཚུགས་ དབྱེ་དཔྱད་འབད་ནི་དེ་རྐྱངལ་ལུ་ ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ་རེ་ལུ་ སྒྲུགས་རེ་འབད་མི་ དྲི་བ་ ཅ་ བཀོད་དགོ།

ཀ) འོག་གི་དཔེ་བ་ཚུ་གི་ལན་བྱེས། (๗པ)

(ཡི་གེའི་སྒྲོར་བ་དང་འབྲེལ་བའི་ དྲི་བ་བཀོད་ནི། དཔེར་ན། ཨིང་སྐད་ལས་རྩོད་ཁའི་ནང་སྐད་སྒྱུར་འབད་ནི་གི་དྲི་བ། བཏུ་སྒྱུར་འབད་ནི་ལ་སོགས་པ་ཚུ་བཀོད་ནི། དྲི་བའི་གྱངས་ཁ་དང་ དྲི་བ་རེ་ལུ་ སྐུགས་འོས་འབབ་ རངཔོས་བལྟ་སྟེ་ བསྡོམས་སྐུགས་ཀྱི་ཨང་ཡིག་ བསྡོམས་๗པ ཡོད)

ཁ) འོག་གི་ དྲི་བ་ཚུ་གི་ ལན་བྱེས། (๗པ)

(ཕྲད་ལག་ལེན་དང་འབྲེལ་བའི་ དཔེར་བརྩོད་རྒྱབ་ནི་འི་ དྲི་བ་๔ བཀོད་དགོ། དྲི་བ་རེ་ ལུ་སྐུགས་๓ རེ་སྟེ་བསྡོམས་སྐུགས་๗པ ཡོད)

ག) ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ།

(๗×๔=๔)

འོག་གི་ དྲི་བ་རེ་ལུ་ལན་ ཀ་ཁ་ག་ང་ རེ་ཡོད་ས་ལས་ ལན་དོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྟགས་ཀུ་ སྒོར་ཐིག་ ○ དེ་བཟུམ་བཀལ།

(ཡི་གུའི་སྒྲོར་བ་ཚུ་གི་ཐོག་ལུ་ དྲི་བ་རེ་ལུ་ སྐུགས་རེ་ འབད་མི་ དྲི་བ་๔ བཀོད་དགོ། བསྡོམས་སྐུགས་๔)
ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ་བཀོད་པ་ད་ ལན་དོམ་ཚུ་གདམ་ཁ་རྒྱབ་པའི་སྐབས་ དབྱེ་བ་དཔྱད་བཅུག་ནིའི་དོན་ལུ་ ལན་ཚིན་དོ་བཟུམ་ཆོར་ ཚུགསཔའི་ ཡེངས་ཁྱེད་ཀྱི་གདམ་ཁ་ཚུ་བཀོད་དགོ།

ང) འོག་གི་ སྟེ་ཚན་ **ཀ་དང་ཁ་** མཐུན་སྒྲིག་འབད། (๗×๔=๔)

(དེའི་སྐབས་ ཡི་གུའི་སྒྲོར་བ་གི་དོན་ཚན་ཚུ་གི་ཐོག་ལུ་ སྐུགས་๔ འབད་མི་ མཐུན་སྒྲིག་འབད་ནིའི་ དྲི་བ་བཀོད་དགོ།)

ཅ) འོག་གི་ བར་ཆོད་པ་ཚུ་ལེགས་ཤོམ་སྟེ་ལྷག་ཞིན་ལས་ ཨིན་[✓]མེན་[✗]ཀྱི་རྟགས་བཀལ།། (๗×๔=๔)

(དེའི་སྐབས་ ཡི་གུའི་སྒྲོར་བ་གི་དོན་ཚན་ཚུ་གི་ཐོག་ལུ་ སྐུགས་๔ འབད་མི་ མཐུན་སྒྲིག་འབད་ནིའི་དྲི་བ་བཀོད་དགོ།)

ཆ) འོག་གི་དྲི་བ་ཚུ་གི་ལན་བྱེས། (๗པ)

(དྲན་གསོ། གནས་ཚད་དང་འཁྱིལ་བའི་ དུས་གསུམ་ཀྱི་ཡིག་སྡེབ། རྩོད་སྒྲུབ་ཐོག་མཚུངས་ཀྱི་ཡིག་སྡེབ། སྡེབ་དང་འཁྱིལ་བའི་གོ་དོན་བྱེ་ན། ཡིག་སྡེབ་ནོར་བཅོས། ཚོག་མཚོན་ལག་ལེན་དང་འབྲེལ་བའི་ དྲི་བ་ཚུ་ བཀོད་དགོ། འདི་གི་དོན་ལུ་སྐུགས་བསྡོམས་๗པ ཡོད། སྐུགས་ཀྱི་བགོ་བཤའ་དང་ དྲི་བའི་མངཊ་གི་འོས་འབབ་རང་གིས་བལྟ་སྟེ་ བཟོ་བ་གིས་འཐུས།)

སློབ་རིམ་ ༡༠ པ།

རྩོང་ཁ་༡ པའི་དྲི་བཀོད་འཆར་གཞིའི་རེའུ་མིག་གི་དཔེ།

(༢༠༢༡)

རིགཔ་རྩལ་ → / དོན་ཚན་ ↓	སྐྱགས་ཀྱི་ལྟེད་ཚད།	དྲི་བ།	དན་ཤེས།	ཞོ་རྟོགས།	ལག་ལེན།	དཔྱད་དཔྱད།	དཔྱད་ཞིབ།	གསར་རྩོམ།	སྐྱགས་བསྡོམས།
སྡེ་ཚན་ཀ་ བྱི་ནིའི་ རིགཔ་རྩལ་ སྐྱགས་ ༣༠ །	འབྲི་རྩོམ། (༢༠)	དྲི་བ་ ༡ པ། ལན་རིང། (༢༠)						༡-༥ (༢༠)	༥ (༢༠)
	ཡིག་འགྲུལ། (༡༠)	དྲི་བ་ ༢ པ། ལན་རིང། (༡༠)			༡-༣ (༡༠)				༣ (༡༠)
སྡེ་ཚན་ ཁ་ སྐད་ཡིག་དང་ ཡི་གུའི་ སྦྱོང་བ། སྐྱགས་ ༧༠ །	སྐད་ཡིག་དང་ཡི་ གུའི་སཏྭ་ཅོན་བ། (༤༠)	དྲི་བ་ ༣ པ། ཀ) ལན་ཐུང་། (༤)	༡ (༢)		༢ (༢)	༣(༢)			༣ (༤)
		དྲི་བ་ ༣ པ། ཁ) ལན་གདམ་ཁ་ཅན། (༥)	༡ (༡)	༢,༣ (༡+༡)		༥ (༡)			༥ (༥)
		དྲི་བ་ ༥ པ། ཀ) ལན་ཐུང་། (༡༤)	༡ (༣)			༢-༥ (༣+༣+༣)	༤ (༣)		༤ (༡༤)
		དྲི་བ་ ༥ པ། ཁ) དཔེར་བརྗོད། (༡༤)			༡-༤(༡༤)				༤ (༡༤)
		དྲི་བ་ ༥ པ། ག) ལན་གདམ་ཅན། (༤)	༡ (༡)	༢,༣ (༡+༡)		༥,༤ (༡+༡)			༤ (༤)
		དྲི་བ་ ༥ པ། ང) མཐུན་སྒྲིག། (༤)				༤ (༤)			༤ (༤)
		དྲི་བ་ ༥ པ། ཅ) ལན་ཐུང་། (༤)				༤ (༤)			༤ (༤)
		དྲི་བ་ ༥ པ། ཆ) ལན་ཐུང་། (༡༤)		༡ (༤)	༢ (༤)		༣ (༤)		༣ (༡༤)
བསྡོམས་ ⟶			༥ (༧)	༤ (༦)	༡༢ (༡༢)	༡༧ (༡༥)	༢ (༢)	༥ (༢༠)	༥༢ (༡༠༠)

དན་གསོ། གྲག་ཤད་ནང་ཡོད་མི་ཙང་ཡིག་ཚུ་ སྐྱགས་དང་ ཕྱི་ཁ་གི་ཚུ་དྲི་བའི་ཙང་ཚིན།

DZONGKHA II

ཁ་རྩོངས་བའི་ཤོག་གཉིས་པའི་དམྱི།

ལྷག་རིག་དང་རྩོམ་རིག། དུས་ཡུན་ཆུ་ཚོད་༣ །
སློབ་རིམ་༡༠ པ། སྐྱགས་བསྡོམ་༡༠༠ །

འོག་གི་བཀོད་རྒྱ་ཚུ་ ལེགས་ཤོམ་སྦེ་ ལྷག་སྟེ་བལྟ།

༡. ཉེ་མ་ **སྐར་མ་༡༥** གི་རིང་ལུ་ ཡི་གུ་མ་བྱི་བར་དྲི་ཤོག་འདི་ ལེགས་ཤོམ་སྦེ་ལྷག།

༢. དྲི་བ་ལྷག་ཚར་ཞིནམ་ལས་ ལན་ཐེངས་གཅིག་ལུ་ དུས་ཡུན་**ཆུ་ཚོད་༣** ཐོག

༣. དྲི་ཤོག་འདི་ནང་ལུ་ དྲི་བ་སྟེ་ཚན་ བཞི་ཡོད་མི་འདི་ཡང་ **ཀ་** འབྲི་རྩེམ། **ཁ་** སྟན་རྩེམ། **ག་** སྡུང་དང་གཏམ་རྒྱུད། **ང་** ནང་ཚོས་བརྩི་མཐོང་ཞིན། སྟེ་ཚན་རེ་རེའི་ནང་ལུ་ ལན་གདམ་ཁ་ཅན་དེད། ལན་ཐུང་། ལན་རིང་གི་དྲི་བ་ཆུ་བཀོད་དེ་ཡོད།

༤. སྟེ་ཚན་དང་འཁྲིལ་བའི་ དྲི་བ་རེ་རེ་བཞིན་ཕྱི་ **བཀོད་རྒྱ་** ཁ་གསལ་སྟེ་ བཀོད་ཡོད་མི་ཆུ་ ལེགས་ཤོམ་སྟེ་ལྷག་སྟེ་ ལན་མ་འཛིལ་བར་བྱིས། དེ་འབདཔ་ད་ དྲི་བ་གདམ་ཁ་ཡོད་མི་ལུ་ ལན་འཐེབ་བྱི་མི་ཆོག། གལ་སྲིད་ལན་འཐེབ་བྱིས་ཡོད་པ་ཅིན་ གོ་རིམ་བཞིན་དུ་ཞེ་ཞིབ་འབད་ཞིནམ་ལས་ མཇུག་གི་ལན་འདི་ ཆ་མེད་གཏང་འོང།

༥. དྲི་བ་སོ་སོའི་སྐུགས་དེ་ཚུ་ ཁ་གསལ་སྟེ་ **གྲུག་ཤད་ནང་ལུ་** བཀོད་དེ་ཡོད།

༦. ཚོས་རྒྱུགས་ འགོ་བཙུགས་ཞིནམ་ལས་ **བློ་སྤྱབ་**ནི་དང་ **དྲི་བ་**དྲི་ནི། **འཕྲ་བཤུས་**རྒྱབ་ནི། **ཨང་ཚུད་**འགྱོ་ནི་ཚུ་ རྩ་ལས་འབད་མི་ཚོག

༧. དྲི་བའི་ལན་ཚུ་ **མཐོ་གས་སུ་**ཅིག་སཔྱི་ཐེས། དེ་འབདཔ་ད་ ཡིག་བཟོ་བཏོན་ཏེ་ **ཉིད་སངས་ས་**སཔྱི་ བྱེད་གི།

༨. དྲི་ཤོག་སོ་སོང་ **ཁ་ཕྱལ་གཏང་ནི་**དང་ ཤོག་ལེབ་**སྒེད་ནི་**ཚུ་ འབད་མི་ཚོག

༩. དྲི་ཤོག་འདི་ ཐུ་ཚིཚི་བཟོ་ནིའི་དོན་ལུ་ **ཐིག་**འཐེན་ནི་དང་ **ཚོན་སྐྱུག་**གིས་བྱི་ནི་ དེ་ལས་བཀོད་རྒྱ་དང་ མ་འཁྲིལ་བའི་**པར་དང་དོ་རྒས་**ཚུ་ གཏི་ཡང་བྱི་མི་ཚོག

༡༠. གལ་སྲིད་ དུས་ཚོད་མ་ཚང་ལས་ དྲི་བའི་ལན་ཚུ་ བྱིས་ཚར་བ་ཅིན་ ལན་ཤོག་**བསྡུམས་**ཞིནམ་ལས་ **ཁུ་སིམ་སིམ་**སཔྱི་སྟོང་དགོ།

༡༡. ཚོས་རྒྱུགས་ཁང་ནང་ལས་ ཕྱི་ཁར་འཐོན་མ་འགྱོ་བའི་ཉེ་མ་ དྲི་བ་ཚུ་གི་**ལན་**ཚར་མ་ཚང་ བཏུག་ཞིནམ་འབད་དེ་བལྟ།

དབྱེ་ཞིབ་འབད་མི་ཚུ་གིས་ སྐྱགས་བགོད་ནིའི་ ཤོག་ཁྲམ།

	འཕྲི་སྟོམ་༡༥			སྟན་སྟོམ་༡༥			སྡུང་དང་གཏམ་རྒྱུད་ ༡༥			ནང་ཚོས་བརྩི་མཐོང་ ༡༥			སྟོམ།
སྐྱགས་ཚད།	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	༡༠༠
	༤	༡༠	༡༠	༤	༡༠	༡༠	༤	༡༠	༡༠	༤	༡༠	༡༠	
སྐྱགས་ཐོན་པ།													

དྲི་བའི་ལམ་སྟོན།

འབྲི་རྩོམ་གྱི་དྲི་བ་འདི་ནང་ གནས་རིམ་དང་འཁྲིལ་བའི་ འབྲི་རྩོམ་ གང་རུང་ཅིག་བཀོད་ཞིན་ལས་ འདིའི་ཐོག་ལུ་ ལན་གདམ་ཁ་དང་ ལན་ཐུང་ ལན་རིང་གི་དྲི་བ་ཚུ་ འོག་ལུ་བཀོད་ཡོད་པའི་ ལམ་སྟོན་དང་འཁྲིལ་ཏེ་བཀོད་དགོས་ཞིན། འཕལ་འཕལ་ འབྲི་རྩོམ་མ་བཀོད་པར་ དྲི་བ་གསུམ་ཆར་འི་ནང་ལུ་ སྤྱིར་བཏང་ སྡུད་དང་འབྲེལ་བའི་ དྲི་བ་ཚུ་བཀོད་རྣུང་བཏུབ།

གནས་རིམ་དང་འཁྲིལ་བའི་ འབྲི་རྩོམ་ གང་རུང་ཅིག་བྱིས་ཞིན་ལས་ འབྲི་རྩོམ་འདིའི་ཐོག་ལུ་ ངོས་ལེན་དང་ བར་གྱི་གནད་དོན་ མཇུག་བསྡུ་ཚུ་ གཅེས་སྤྱིས་ཡོད་གཅ་ དབྱེ་དཔྱད་འབད་ནིའི་དྲི་བ། འབྲི་རྩོམ་གྱི་འབྲི་བཀོད་དང་འབྲེལ་བའི་དྲི་བ། གཞན་གྱིས་བྱིས་ཡོད་པའི་ འབྲི་རྩོམ་བསྒྲུབ་ཞིབ་འབད་དེ་ སྐྱོན་ཡོན་ངོས་འཛིན་འབད་ནི། འབྲི་རྩོམ་ལེགས་བཅོས་འབད་དེ་བྱི་ནི། འབྲི་རྩོམ་གྱི་ཁྲད་རྣམ་ངོས་འཛིན་འབད་ནིའི་ དྲི་བ་ཚུ་བཀོད་དགོས་དང།

རྩོམ་པ་ཡོའི་ འབྲི་ཐངས་དང་ མཚོ་ཐངས་ལུ་ བདེན་རྫུན་དང་ སྐྱོན་ཡོན་ དབྱེ་དཔྱད་འབད་ནིའི་དྲི་བ། རྩ་བའི་བརྗོད་པ་དང་ རྒྱབ་རྟེན་གྱི་ བཤད་པ་ངོས་འཛིན་འབད་ནིའི་དྲི་བ། འབྲི་རྩོམ་གྱི་བརྗོད་དོན་ གོ་བ་ལེན་ནིའི་དྲི་བ་ཚུ་བཀོད་དགོ།

འབྲི་རྩོམ་གྱི་དྲི་བ་འདི་ སློབ་དེབ་ལུ་གཞི་བཞག་སྟེ་མེན་པར་ རྩོམ་ཁའི་རྩ་གཞུངས་གི་ གནས་རིམ་ཨ་པ་དང་ སློབ་རིམ་ ༡༠ པའི་ ལྷག་རིག་དང་རྩོམ་རིག་ནང་ལུ་ འབྲི་རྩོམ་དང་འབྲེལ་བའི་ ཚོགས་གྲུབ་དང་ལས་དོན་ཚུ་ལུ་གཞི་བཞག་སྟེ་ དེ་དང་འཁྲིལ་བའི་ ཚོགས་གྲུབ་ཚུ་ཐོག་སྟེ་ ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ནིའི་དྲི་བ་ཚུ་ བཀོད་དགོས་ཞིན།

བཀོད་རྒྱུ། འོག་གི་ འབྲི་རྩོམ་འདི་ ལྷག་ཞིན་ལས་ དྲི་བ་ཚུའི་ལན་བྱིས།

(རྒྱུད་སྐྱལ་དང་ ལོ་རྒྱུས་ འཚར་སྣང་ རྒྱས་བཤད་འབྲི་རྩོམ་ གང་རུང་ཅིག་ འདི་ནང་ལུ་བཀོད་ཞིན་ན་ འབྲི་རྩོམ་འདི་ལུ་གཞི་བཞག་སྟེ་དྲི་བ་བཀོད།)

དྲི་བ་དང་པ། **ལན་གདམ་ཁ་ཅན།** **(སྐུགས་ ๑x๔=๔)**

འོག་གི་དྲི་བ་བཞི་ཏེ་ལུ་ལན་ **ཀ་ཁ་གཅ་ང་** ཞེ ཡོད་ས་ལས་ ལན་དོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྟགས་ཀུ་སྐོར་ཨིག་○དེ་ བཟུམ་བཀོལ།

དྲི་བ་རེ་ལུ་སྐུགས་རེ་འབད་མི་ ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ་ལུ་བཀོད་དགོ། ལན་གདམ་གདམ་ཁའི་དྲི་བ་ཚུ་བཀོད་པ་དེ་ འཛམ་ཇོང་ཇོ་སྐྱེ་ གདམ་ཁ་རྒྱབ་ནི་མེན་པར་ དབྱེ་བ་དཔྱད་དེ་ ལན་རྒྱབ་བཏུག་ནིའི་དོན་ལུ་ ལན་ངོམ་དང་གཅིག་ཁར་ ལན་ཨིན་དོ་བཟུམ་ཚོར་ཚུགས་པའི་ ཡེངས་ཁྱེད་ཀྱི་གདམ་ཁ་ཚུ་བཀོད་དགོ།)

དྲི་བ་གཉིས་པ། **ལན་ཐུབ།** **(སྐུགས་༡x༤=༡༠)**

འོག་གི་ དྲི་བ་ ༤ གི་རའི་ ལན་བྱེས།

(ལན་ཐུབ་གི་དོན་ལུ་ གོང་གི་ཡིག་ཐྲིས་མ་འབད་རྩད་ ཡང་ན་ ཡིག་ཐྲིས་མ་ (ཡིག་རྒྱགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྐྱངས་ཅིག་ བཀོད་ཞིན་མ་ལས་ འདི་འི་ཐོག་ལུ་ དྲི་བ་བཅོ་ནི་དང། ཡང་ན་ ཡིག་ཐྲིས་མ་ཚེད་པར་ སྤྱིར་བཏང་ འཐི་རྩོམ་དང་འཐེལ་བའི་དྲི་བ་ཚུ་བཀོད་རྩྭ་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་ཐྲིས་མ་ནང་ལས་ འདྲ་བཤུས་རྒྱབ་ནི་ཚུ་ལས་ལྷག་སྟེ་ ལས་དོན་དང་འཁྲིལ་བའི་ ཡོངས་གྲུབ་ཐོབ་སྟེ་ཡོད་མེད་ དཔྱེ་ཞིབ་འབད་ཚུགས་པའི་ ཡོངས་གྲུབ་གཞི་བཞག་གི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

དྲི་བ་གསུམ་པ། **ལན་རིད།** **(སྐུགས་༡oxཀ=༡o)**

འོག་གི་ དྲི་བ་ཨ་ ལས་ཀ་ གདམ་ཁ་རྒྱབ་སྟེ་ ལན་ བྱེས།

(ལན་རིད་གི་དོན་ལུ་ གོང་གི་ཡིག་ཐྲིས་མ་འབད་རྩད་ ཡང་ན་ ཡིག་ཐྲིས་མ་ (ཡིག་རྒྱགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྐྱངས་ཅིག་བཀོད་ཞིན་མ་ལས་ འདི་འི་ཐོག་ལུ་ དྲི་བ་བཀོད་ནི་དང། ཡང་ན་ ཡིག་ཐྲིས་མ་ཚེད་པར་ སྤྱིར་བཏང་ འཐི་རྩོམ་དང་འཐེལ་བའི་ དྲི་བ་ཚུ་བཀོད་རྩྭ་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་ཐྲིས་མ་ནང་ལས་ འདྲ་བཤུས་རྒྱབ་ནི་ཚུ་ཚེད་པར་ ལས་དོན་དང་འཁྲིལ་བའི་ ཡོངས་གྲུབ་ཐོབ་སྟེ་ཡོད་མེད་ དཔྱེ་ཞིབ་འབད་ཚུགས་པའི་ གནས་ཚད་མཐོ་བའི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

སྟེ་ཚན་ཁ། སྐན་རྩོམ། སྐུགས་ཀཅ །

དྲི་བའི་ལམ་སྟོན།

(སྐན་རྩོམ་གྱི་དྲི་བ་འདི་ནང་ སྐན་རྩོམ་གྱི་དཔྱེ་བ་ཚུ་ལས་ གང་རུང་ཅིག་བཀོད་ཞིན་མ་ལས་ འདིའི་ཐོག་ལུ་ ལན་གདམ་ཁ་ཅན་དང་ ལན་ཐུང་ ལན་རིང་ གི་དྲི་བ་ཚུ་ འོག་ལུ་བཀོད་ཡོད་པའི་ ལམ་སྟོན་དང་འཁྲིལ་ཏེ་བཀོད་དགོཔ་ཨིན།

སྐན་རྩོམ་གྱི་དཔྱེ་བ་ ཚོ་ཅེ། དཔྱེ་གཏམ། རྩོམ། གསལ་བཤད་ཚུ་ལས་ གཅིག་དང། ཡང་ན། གཅིས་དེ་ཅིག་གི་ཐོག་ལུ་ དྲི་བ་ཚུ་བཀོད་དགོ། དྲི་བ་ཚུ་ནང་ རྩོམ་རིག་ཚུ་ ཆོག་གི་སྐན་ཚ(ཆོག་གི་སྤྲོས། དཔེ་དོན། སྐུ་གཏམ་)བཙུགས་ཏེ་ འཐི་ཐངས་ཀྱི་རིག་རྩལ་ཐོབ་སྟེ་ཡོད་མེད་དང། ཆོག་ལ་བཅད་དང་ ཆོག་ལྷུག་ སྤེལ་མ་ཚུ་བཀོད་ཐངས་ཀྱི་ རིག་རྩལ་དཔྱད་ཀྱི་དྲི་བ་ཚུ་བཀོད་དགོ། ཚོ་ཅེ་དང་ དཔྱེ་གཏམ་ རྩོམ་ཚུ་ གནས་སྐྱངས་མ་འཛིལ་ཚུ་ནང་ བཙུགས་ཏེ་ འབག་ཡེན་འཐབ་ཚུགས་མི་ཚུགས་བལྟ་ནི་ དྲི་བ་ཚུ་བཀོད་དགོ།

སྐན་རྩོམ་གྱི་དྲི་བ་འདི་ སྤྲོབ་དེབ་ལུ་གཞི་བཞག་སྟེ་མེན་པར་ རྩོད་ཞའི་རྩ་གཞུངས་གི་ གནས་རིམ་བཞི་པ་ སྤྲོབ་རིམ་དགུ་པ་དང་ བཅུ་པའི་ ལྷག་རིག་དང་ རྩོམ་རིག་ནང་ལུ་ སྐན་རྩོམ་དང་འཁྲིལ་བའི་ སྤྱོགས་གྲུབ་དང་ཡས་དོན་ཚུ་ལུ་གཞི་བཞག་སྟེ་ དེ་དང་འཁྲིལ་བའི་ སྤྱོགས་གྲུབ་ཚུ་ཐོབ་སྟེ་ཡོད་མེད་ དཔྱེ་ཞིབ་འབད་ནིའི་དྲི་བ་ཚུ་ བཀོད་དགོ།)

བཀོད་རྒྱུ། འོག་གི་ སྐན་རྩོམ་འདི་ ལྷག་ཞིན་མ་ལས་ དྲི་བ་ཚུའི་ལན་ཁྱེས།

(སྐན་རྩོམ་གྱི་དཔྱེ་བ་ ཚོ་ཅེ། དཔྱེ་གཏམ། རྩོམ། གསལ་བཤད་ཚུ་ལས་ གང་རུང་གི་ཡིག་ཐྲིས་མ་ (ཡིག་རྒྱགས་) ཅིག་བཀོད། ཡང་ཅིན་ ཡིག་ཐྲིས་མ་ མེད་པར་ དྲི་བ་དང་པ་ལས་ གསུམ་པ་ཚུན་ སྤྱིར་བཏང་སྐན་རྩོམ་དང་འཁྲིལ་བའི་ དྲི་བ་བཀོད་རྩྭ་བཏུབ།)

དྲི་བ་དང་པ། ལན་གདམ་ཁ་ཅན། (སྐུགས་༡x५=५)

འོག་གི་དྲི་བ་རེ་ལྟ་ལན་ **ཀ་ཁ་གཅ་ང** ཡོད་ས་ལས་ ལན་ངོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྟགས་ཀུ་སྒོར་ཐིག་○དེ་བཟུམ་བཀལ།

(དྲི་བ་རེ་ལྟ་སྐུགས་རེ་འབདཝ་མི་ ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ་ལྟ་བཀོད་དགོ། ལན་གདམ་གདམ་ཁའི་དྲི་བ་ཚུ་བཀོདཔ་དང་ འཛམ་ཀྱངཀྱི་སྒེ་ མདམ་ཁ་རྒྱབ་ནི་ མེན་པར་ དཔྱེ་བ་དཔྱད་དེ་ ལན་རྒྱབ་བཙུག་ནིའི་དོན་ལུ་ ལན་ངོམ་དང་གཅིག་ཁང་ ལན་ཚིན་དོ་བཟུམ་ཚོར་ཚུགས་པའི་ ཡེངས་ཁྱེད་ཀྱི་གདམ་ཁ་ཚུ་ བཀོད་དགོ།)

དྲི་བ་གཉིས་པ། ལན་སྦུད། (སྐུགས་२x५=१०)

འོག་གི་ དྲི་བ་५ ག་རའི་ ལན་སྤེས།

(ལན་སྦུངཔ་ཅིན་ལུ་ གོང་གི་ཡིག་སྤེས་མ་འབད་རུང་ ཡང་ན་ ཡིག་སྤེས་མ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྟངས་ཅིག་ བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཙོ་རྒྱུ་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་སྤེས་མ་ནང་ལས་ འབྲ་བཤུས་རྒྱབ་ནི་ཚུ་ལས་ལྷག་སྟེ་ ལས་དོན་དང་འཁྲིལ་བའི་ ལྟེགས་གྲུབ་ཐོག་སྟེ་ཡོད་མེད་ དཔྱེ་ཞིབ་འབད་ཚུགས་པའི་ ལྟེགས་གྲུབ་གཞི་བཞག་གི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

དྲི་བ་གསུམ་པ། ལན་རིད། (སྐུགས་१०x१=१०)

འོག་གི་ དྲི་བ་२ ལས་१ གདམ་ཁ་རྒྱབ་སྟེ་ ལན་ བྱེས།

(ལན་རིད་གི་དོན་ལུ་ གོང་གི་ཡིག་སྤེས་མ་འབད་རུང་ ཡང་ན་ ཡིག་སྤེས་མ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྟངས་ཅིག་ བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཙོ་རྒྱུ་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་སྤེས་མ་ནང་ལས་ འབྲ་བཤུས་རྒྱབ་ནི་ཚུ་ཚེན་པར་ ལས་དོན་དང་འཁྲིལ་བའི་ ལྟེགས་གྲུབ་ཐོག་སྟེ་ཡོད་མེད་ དཔྱེ་ཞིབ་ འབད་ཚུགས་པའི་ གནས་ཚད་མཐོ་བའི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

སྡེ་ཚན་གཉི། སྡུད་དང་ཀུམ་རྩྭད། སྐུགས་२५ ।

བཀོད་རྒྱ། སྒོ་དེབ་དང་ ལྷག་དེབ་ནང་ཡོད་པའི་ སྡུད་ཚུ་ལུ་གཞི་བཞག་སྟེ་ འོག་གི་ དྲི་བ་ཚུ་གི་ལན་བྱེས།

(སྡུངཀི་དྲི་བ་འདི་ནང་ སྡུངཁང་རྒྱང་ཅིག་བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ ལན་གདམ་ཁ་དང་ ལན་སྦུང་ ལན་རིངཀི་དྲི་བ་ཚུ་ འོག་ལུ་ བཀོད་ཡོད་པའི་ ལམ་སྟོན་དང་འཁྲིལ་ཏེ་བཀོད་དགོཔ་ཨིན། དྲི་བ་ལ་ལུ་ཅིག་ སྡུངམ་བཀོད་པར་ སྤྱིར་བཏང་ སྡུངཀི་རིགཁ་ཤུལ་ཁྲལ་ རྣམས་སོགས་དང་འབྲེལ་བའི་ དྲི་བ་ཚུ་བཀོད་རྒྱང་བཏུབ།

དྲི་བ་བཀོདཔ་ད་ སྡུངཁས་རྩོམ་འབདཝ་དེ་བྱེ་ནི། སྡུངཨཡོ་མཐུདཔ་དེ་བྱེ་ནི། གཞན་གྱིས་བྱེས་ཡོད་པའི་སྡུངཁྲག་སྟེ་གོ་བ་ལེན་ནི། གཞན་གྱིས་བྱེས་ཡོད་པའི་སྡུངབསྒྲུབ་ཞིབ་འབདཝ་ནི། གནས་སྟངས་བཙོ་ཡོད་མི་ཀུ་ གཞི་བཞག་སྟེ་ སྡུངབྱེ་ནི། སྤྱོས་དང་སྤྱོ་བཏགས་པོག་ལས་བྱེ་ནི། བཙུད་སྟུད་དང་རྒྱས་བཤད་ཀྱུབ་སྟེ་བྱེ་ནི། སྡུངཀི་གཞི་གཅིག་ཀུ་ དགའ་སྤྱོའི་ཉམས་བཙུགས་ཏེ་ འབྲུངངེམ་བྱེ་བཙུག་ནི།) ལ་སོགས་པའི་ དྲི་བ་ཚུ་བཀོད་དགོ།

སྡུངས་གི་དྲི་བ་འདི་ སློབ་དེབ་ནང་གསལ་ཡོད་མི་འདི་མེན་པར་ རྩོད་ཁའི་རྣ་གཞུང་གི་ གནས་རིམ་བཞི་པ་ སློབ་རིམ་དགུ་པ་དང་བཅུ་པའི་ ལྷག་རིག་དང་རྩོམ་རིག་ནང་ལུ་ སྡུངས་དང་འཚེལ་བའི་ ཕྱོགས་གྲུབ་དང་ལས་དོན་ཚུ་ལུ་གཞི་བཞག་སྟེ་ དེ་དང་འཁྱིལ་བའི་ ཕྱོགས་གྲུབ་ཚུ་ཐོབ་སྟེ་ ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ནིའི་དྲི་བ་ཚུ་བཀོད་དགོཔ་ཨིན།

དྲི་བ་དང་པ། ལན་གདམ་ཁ་ཅན། (སྐུགས་ ɣx५=५)

འོག་གི་དྲི་བ་རེ་ལུ་ལན་ **ཀ་ཁ་གཅ་ང** ཅ ཡོད་ས་ལས་ ལན་ངོམ་འདི་ གདམ་ཁ་རྐྱབ་སྟེ་ ཀ་རྟགས་གུ་སྦྲོང་ཐིག་○དེ་བཟུམ་བཀལ།

(དྲི་བ་རེ་ལུ་སྐུགས་རེ་འབད་མི་ ལན་གདམ་ཁ་ཅན་གྱི་དྲི་བ་ལྟ་བུཝ་ད། ལན་གདམ་གདམ་ཁའི་དྲི་བ་ཚུ་བཀོད་པ་དང་ འཛམ་ཇོང་ཇོ་སྦྲེ་ གདམ་ཁ་རྐྱབ་ནི་མེན་པར་ དབྱེ་བ་དཔྱད་དེ་ ལན་རྐྱབ་བཟུམ་ནིའི་དོན་ལུ་ ལན་ངོམ་དང་གཅིག་ཁར་ ལན་ཚིན་དོ་བཟུམ་ཚོར་ཚུགས་པའི་ ཡེངས་ཁྱེད་ཀྱི་གདམ་ཁ་ཚུ་བཀོད་དགོ།)

དྲི་བ་གཉིས་པ། ལན་སྦྱང་། (སྐུགས་ ɣx५=ɾo)

འོག་གི་ དྲི་བ་५ ག་རའི་ལན་སྤེལ།

(ལན་སྦྱང་གི་དོན་ལུ་ གོང་གི་ཡིག་སྤེལམ་འབད་རྟུང་ ཡང་ ཡིག་སྤེལམ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ གནས་སྐྱར་ཅིག་བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཙོ་རྟུང་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་སྤེལམ་ནང་ལས་ འདྲ་བཤུས་རྒྱབ་ནི་ཚུ་ལས་ལྷག་སྟེ་ ལས་དོན་དང་འཁྱིལ་བའི་ ཕྱོགས་གྲུབ་ཐོབ་སྟེ་ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ཚུགས་པའི་ ཕྱོགས་གྲུབ་གཞི་བཞག་གི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

དྲི་བ་གསུམ་པ། ལན་རིད། (སྐུགས་ ɾoxɾ=ɾo)

འོག་གི་ དྲི་བ་२ ལས་ɾ གདམ་ཁ་རྐྱབ་སྟེ་ ལན་ སྤེལ།

(ལན་རིད་གི་དོན་ལུ་ གོང་གི་ཡིག་སྤེལམ་འབད་རྟུང་ ཡང་ ཡིག་སྤེལམ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ གནས་སྐྱར་ཅིག་བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཙོ་རྟུང་བཏུབ།

དྲི་བའི་ལན་ཚུ་ ཡིག་སྤེལམ་ནང་ལས་ འདྲ་བཤུས་རྒྱབ་ནི་ཚུ་མེན་པར་ ལས་དོན་དང་འཁྱིལ་བའི་ ཕྱོགས་གྲུབ་ཐོབ་སྟེ་ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ཚུགས་པའི་ གནས་ཚད་མཐོ་བའི་ དྲི་བ་ཚུ་བཀོད་དགོ།)

སྟེ་ཚན་དེ། ནང་ཚོས་བཙུ་མཐོད། སྐུགས་ ५५ ।

བཀོད་རྒྱུ། འོག་གི་ ཡིག་བཅུའིམམ་/ཚིགས་བཅད་འདི་ ལྷག་ཞིནམ་ལས་ དྲི་བ་ཚུའི་ལན་སྤེལ།

ཁ་ནང་ཆོས་བརྒྱ་མཐོང་གི་དྲི་བ་འདི་ རྩོང་ཁའི་རྒྱ་གཞུང་གི་ སློབ་རིམ་བཅུ་པའི་ ལྷག་རིག་དང་རྩོམ་རིག་ནང་ལུ་ ནང་ཆོས་བརྒྱ་མཐོང་(རྒྱལ་སྡས་ཡག་ལེན)དང་འབྲེལ་བའི་ ཚྭོགས་གྲྭབ་དང་ ཡས་དོན་ དོན་ཚན་ཆུ་ལུ་གཞི་བཞག་སྟེ་ དེ་དང་འཁྱིལ་བའི་ ཚྭོགས་གྲྭབ་ཆུ་ཐོབ་སྟེ་ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ནིའི་དྲི་བ་ཆུ་ བཀོད་དགོཔ་ཨིན།།

དྲི་བ་དང་པ། ལན་གདམ་ཁ་ཅན། (སྐུགས་ ᠈᠐᠘᠑=᠔)

འོག་གི་དྲི་བ་རེ་ལུ་ལན་ **ཀ་ཁ་གུ་ང** ཅ ཡོད་ས་ཡས་ ལན་ངོམ་འདི་ གདམ་ཁ་ཆུབ་སྟེ་ ཀ་རྟགས་ཀུ་སྒོར་ཐིག་○དེ་བཟུམ་བཀལ།

(དྲི་བ་རེ་ལུ་སྐུགས་རེ་འབད་མི་ ལན་གདམ་ཁ་ཅན་ཀྱི་དྲི་བ་ལྟ་བཀོད་དགོ། ལན་གདམ་གདམ་ཁའི་དྲི་བ་ཚུ་བཀོདཔ་དང་ འཛམ་ཀྱོངཀྱོ་སྒྲ་ གདམ་ཁ་ཆུབ་ནི་ མེན་པར་ དབྱེ་བ་དཔྱད་དེ་ ལན་ཆུབ་བཙུག་ནིའི་དོན་ལུ་ ལན་ངོམ་དང་གཅིག་ཁར་ ལན་ཁིན་དོ་བཟུམ་ཚོར་ཚུགས་པའི་ ཡེངས་ཁྱད་ཀྱི་གདམ་ཁ་ཚུ་ བཀོད་དགོ།)

དྲི་བ་གཉིས་པ། ལན་སྦྱང་། (སྐུགས་ ᠔X᠓=᠕)

འོག་གི་ དྲི་བ་᠔ ག་རའི་ལན་སྤེས།

(ལན་སྦྱང་གི་དོན་ལུ་ གོང་གི་ཡིག་ཟིསམ་འབད་རུང་ ཡང་ན་ ཡིག་ཟིསམ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྟངས་ཅིག་ བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཟོ་རུང་བཏུབ་ནི་དང། ཡང་ན་ འབྲི་རྩོམ་སྤུ་བཏང་དང་འབྲེལ་བའི་ དྲི་བ་ཆུ་བཀོད་རུང་བཏུབ། དྲི་བའི་ལན་ཆུ་ ཡིག་ཟིསམ་ནང་ལས་ འབྲ་བཤུས་རྒྱབ་ནི་ཆུ་ལས་ལྷག་སྟེ་ ལས་དོན་དང་འཁྱིལ་བའི་ ཚྭོགས་གྲྭབ་ཐོབ་སྟེ་ཡོད་མེད་ དབྱེ་ཞིབ་འབད་ཆུགས་པའི་ ཚྭོགས་གྲྭབ་གཞི་བཞག་གི་ དྲི་བ་ཆུ་བཀོད་དགོ།)

དྲི་བ་གསུམ་པ། ལན་རིད། (སྐུགས་ ᠈᠐X᠓=᠈᠐)

འོག་གི་ དྲི་བ་᠒ ལས་᠓ གདམ་ཁ་ཆུབ་སྟེ་ ལན་ ཟིས།

(ལན་རིད་གི་དོན་ལུ་ གོང་གི་ཡིག་ཟིསམ་འབད་རུང་ ཡང་ན་ ཡིག་ཟིསམ་ (ཡིག་རྒྱུགས) སོ་སོ་ཅིག་དང་ ཡང་ན་ གནས་སྟངས་ཅིག་བཀོད་ཞིནམ་ལས་ འདིའི་ཐོག་ལུ་ དྲི་བ་བཟོ་རུང་བཏུབ།

བཀའ་དྲིན་ཆེ།

ལྷག་རིག་དང་རྩོམ་རིག། དུས་ཡུན་ཆུ་ཚོད་༣ ।
བློབ་རིམ་༡๐ པ། སྐུགས་བསྡོམ་༡๐๐ ।

འོག་གི་བཀོད་རྒྱ་ཚུ་ ལེགས་ཤོམ་སྦེ་ ལྷག་སྟེ་བལྟ།

๑. ཅེ་མ་ **སྐར་མ་๑๙** གི་རིང་ལུ་ ཡི་གུ་མ་བྱེ་བར་དུ་ཤོག་འདི་ ལེགས་ཤོམ་སྦེ་ལྷག།

๒. དྲི་བ་ལྷག་ཚར་ཞིན་ལས་ ལན་བྱེ་ནི་རིའི་དོན་ལུ་ དུས་ཡུན་**ཆུ་ཚོད་༡** ཐོབ།

๓. དྲི་ཤོག་འདི་ནང་ལུ་ དྲི་བ་སྟེ་ཚན་ བཞི་ཡོད་མི་འདི་ཡང་ **ཀ་** འབྲི་རྒྱུམ། **ཁ་** སྟན་རྒྱུམ། **ག་** སྡུང་དང་གཏམ་རྒྱུད། **ང་** ནང་ཚོས་བརྩེ་མཐོང་ཞིན། སྟེ་ཚན་རེ་རེའི་ནང་ལུ་ ལན་གདམ་ཁ་ཅན་དང་ ལན་ཐུང་ ལན་རིང་གི་དྲི་བ་ཚུ་བཀོད་དེ་ཡོད།

๔. སྟེ་ཚན་དང་འཁྲིལ་བའི་ དྲི་བ་རེ་རེ་བཞིན་ཐུ་ **བཀོད་རྒྱུ་** ཁ་གསལ་སྟེ་ བཀོད་ཡོད་མི་ཚུ་ ལེགས་ཤོམ་སྟེ་ལྷག་སྟེ་ ལན་མ་འཛོལ་བར་བྱེས། དེ་འབདཝ་ད་ དྲི་བ་གདམ་ཁ་ཡོད་མི་ལུ་ ལན་འཐེབ་བྱེ་མི་ཚོགཔ། གལ་སྲིད་ལན་འཐེབ་བྱེས་ཡོད་པ་ཅིན་ གོ་རིམ་བཞིན་ དབྱེ་ཞིབ་འབད་ཞིན་ལས་ མཇུག་གི་ལན་འདི་ ཚམེད་གཏང་འོང།

๕. དྲི་བ་སོ་སོའི་སྐུགས་དེ་ཚུ་ ཁ་གསལ་སྟེ་ **གུག་ཤད་ནང་ལུ་** བཀོད་དེ་ཡོད།

๖. ཚོས་རྒྱུགས་ འགོ་བཙུགས་ཞིན་ལས་ **བློ་སྦྱབ་**ནི་དང་ **དྲི་བ་**དྲི་ནི། **འབྲ་བཤུས་**རྒྱབ་ནི། **ཞར་ཚུད་**འགྱོ་ནི་ཚུ་ རྩ་ལས་ འབད་མི་ཚོགཔ

๗. དྲི་བའི་ལན་ཚུ་ **མཐུགས་སུ་**ཅིག་སྟེ་བྱེས། དེ་འབདཝ་ད་ ཡིག་བཟོ་བཏོན་ཏེ་ **ཉིང་མངས་ས་**སྟེ་ བྱེ་དགོ།

๘. དྲི་ཤོག་སོ་སོར་ **ཁ་ཕྱོགས་གཏུང་ནི་**དང་ ཤོག་ལེབ་**སྟེང་ནི་**ཚུ་ འབད་མི་ཚོགཔ།

๙. དྲི་ཤོག་འདི་ བྱ་ཚིའི་བཟོ་ནིའི་དོན་ལུ་ **ཐིག་**འཐེན་ནི་དང་ **ཚོན་སྐྱ་**གིས་བྱེ་ནི་ དེ་ལས་བཀོད་རྒྱུ་དང་ མ་འཁྲིལ་བའི་**པར་དངོས་རྟགས་**ཚུ་ གཏེ་ཡང་བྱེ་མི་ཚོགཔ།

๑๐. གལ་སྲིད་ དུས་ཚོད་མ་ཚར་མ་ལས་ དྲི་བའི་ལན་ཚུ་ བྱེས་ཚར་བ་ཅིན་ ལན་ཤོག་**བསྡུམས་**ཞིན་ལས་ **ཁུ་སིམ་སིམ་**སྟེ་ སྟོངཔ་དགོ།

๑๑. ཚོས་རྒྱུགས་ཁང་ནང་ལས་ ཕྱི་ཁར་འཐོན་མ་འགྱོ་བའི་ཉེ་མ་ དྲི་བ་ཚུ་གི་**ལན་**ཚར་མ་ཚར་ བརྟག་ཞིབ་འབད་དེ་བལྟ།

དབྱེ་ཞིབ་འབད་མི་ཚུ་གིས་ སྐུགས་བཀོད་ནིའི་ ཤོག་ཁྲམ།

	འཛིན་རྩོམ་༡๥			སྡུན་རྩོམ་༡๥			སྡུངཔ་གཏམ་རྒྱུད་༡๥			ནང་ཚོས་བརྩེ་མཐོང་ ๑๥			སྟོངཔ
སྐུགས་ཚད།	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	ལན་གདམ་ཁ་ཅན།	ལན་ཐུང་	ལན་རིང་	๑๐๐
	๕	๑๐	๑๐	๕	๑๐	๑๐	๕	๑๐	๑๐	๕	๑๐	๑๐	
སྐུགས་ཐོབ་པ།													

འོག་གི་ འབྲི་རྩོམ་འདི་ དྲནམ་བརྗོད་ཏེ་ལྷག་ཞིནམ་ལས་ དྲི་བ་ཚུ་གི་ལན་བྲིས།

༄ ང་བཅས་ར་ ཐབས་དང་ཤེས་རབ་དེ་ར་ཡོད་པ་ཅིན་ ཐ་ན་མི་རྣམས་ཀུན་གྱིས་ དགོ་མ་བཏུབ་པའི་ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་ཡང་ དུ་རེས་ནངས་པ་འོང་འབབ་ཀྱི་ འབྱུང་ཁུངས་ཅིག་འབད་ ལག་ལེན་འཐབ་ཚུགས་པའི་ དུས་སྐབས་ཤརཝ་ཨིན་མས། འདས་པའི་ལོ་ཚུ་ནང་འབད་བ་ཅིན་ ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་གིས་ རང་བཞིན་གནས་སྟངས་ལུ་གནོད་ཉེན་ཡོད་པའི་སྐོར་ལས་ འབྲེལ་ཡོད་དབང་འཛིན་ཚུ་གིས་ མི་མང་ལུ་གོ་བ་བརྡ་སྤྲོད་ཀྱི་ ལས་རིམ་ཚུ་ ག་དེམ་ཅིག་འགོ་འདྲེན་འཐབ་སྟེ་འབད་རུང་ མི་ཚུ་གིས་སྣང་མེད་རྒྱབ་སྐྱུར་ཐོག་ ག་ལྗོད་བཀོག་བཞག་སར་ མཐོངམ་ཨིན་མས།

ཨིན་རུང་ དེངསང་གི་ཐབས་རིག་མ་འདྲཝ་ཚུ་ རྒྱལ་ཁབ་ཡར་རྒྱས་ཀྱི་ འགྱུར་བ་དང་བསྟུན་ཏེ་ ངམ་ངམ་ཤུགས་ཀྱིས་ཐོན་པའི་བསྐྱང་ལས་ ག་ལྗོད་བཀོག་བཞག་མི་ ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་ཡང་ འཕྲུལ་ཆས་ཀྱི་ཐོག་ལས་ སྐྱུར་བཅོས་འབདཝ་ད་ འོང་འབབ་བཟོ་ནིའི་ རྒྱུ་ཆས་ཅིག་ལུ་གྱུར་ཡོད་པ་ཨིན། ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་ ཕྱི་སེལ་རྐྱབ་པ་ཅིན་རུལ་བཏུབ་མི་དང་ རུལ་མ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་ཟེར་ དབྱེ་ཁག་གཉིས་འབད་ ཐོན་དོ་ཡོདཔ་ད་ དེ་ཡང་ རུལ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་ནང་ ཚོད་བསྲེ་དང་ཤིང་འབྲས་ དེ་ལས་ བཞེས་སྒོའི་ལྷག་ལུས་ཚུ་ ཨིནམ་བཞིན་དུ་ རུལ་མ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་ནང་ ཀྱིབ་དམ་དང་ ཤེལ་དམ་ ལྕགས་ཏེན་གྱིས་བཟོ་མི་ བཟའ་འཐུང་གི་ ཏོད་ཚུ་ཨིན་མས།

འཕྲུལ་ཁམས་ཅིག་ཁར་ ཐིམ་ཕུག་ཁྲོམ་སྡེ་གིས་ གསར་སྤྲིས་ཐང་ལུ་ རང་བཞིན་གྱི་ལུད་བཟོ་ནིའི་ ལས་འགུལ་ཅིག་གཞི་བཙུགས་འབད་མིའི་ནང་ གཙོ་བོ་རུལ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་ཚུ་ ལག་ལེན་འཐབ་ཨིན་མས། འགོ་ཐོག་ལུ་ལས་འགུལ་དེ་ནང་ བདུན་ཕྲག་རེ་ལུ་ རྫས་སྦྱོར་མེད་པའི་ རུལ་བཏུབ་པའི་ཕྱགས་སྐྱིགས་ མེ་ཊྲིག་ཊོན་༩ དེ་རེ་ ལྡོད་དོ་ཡོདཔ་ཨིན་རུང་ དུ་རེས་ནངས་པ་ གསུམ་ལྷབ་ཀྱིས་ ཡར་སེང་སོང་ཡོད་མི་ དེ་ཡང་གཙོ་བོ་ར་ རང་བཞིན་གྱི་ ལུད་བཟོ་ལུ་བརྟེན་ འོང་འབབ་ལེགས་ཤོམ་འབད་ བཟོ་ཚུགས་ནི་དེ་གིས་ཨིན་མས།

ལས་འགུལ་དེ་གིས་ སྤྱི་ཟླ་དང་པ་ལས་ བཞི་པ་ཚུན་ རུལ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་ཀྱི་དོས་ སྣུམ་འཁོར་ཊྲག་༢༢༨ དེ་ཅིག་ ལག་ལེན་འཐབ་སྟེ་ རང་བཞིན་གྱི་ལུད་བཟོཝ་ད་ འོང་འབབ་དངུལ་ཀྲམ་༧༨,༠༠༠ དེ་ཅིག་ བཟོ་ཚུགས་ནུག རུལ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་ ཉིམ་མ་ཐོག་པའི་ཁང་མིག་ནང་ བདུན་ཕྲག་དག་པ་ཅིག་ སྙམ་བཞག་པའི་ཤུལ་ལས་ འཕྲུལ་ཆས་ནང་ འདེགས་ཞིནམ་ལས་ ཕྱམ་ཕྱིམ་འབད་ རང་བཞིན་གྱི་ལུད་ བཟོཝ་ཨིན་མས། རང་བཞིན་གྱི་ལུད་འདི་ བཅུད་ལྡན་ཡོད་ནི་དེ་གིས་ མེ་ཏོག་ལྡུམ་ར་དང་ ཚོད་བསྲེ་ལྡུམ་ར་ཚུ་ནང་ ཀླུག་ནིའི་དོན་ལུ་ མི་མང་གིས་ མགོ་འདོད་སྒྲོམ་བསྐྱེདཔ་བཞིན་དུ་ ཚོང་སྒྱུར་ལེགས་ཤོམ་འབད་ འཐབ་ཚུགས་དོ་ཡོདཔ་ཨིན་མས།

དེ་བཟུམ་འབད་ འདས་པའི་ལོ་ཚུ་ནང་ རུལ་མ་བཏུབ་པའི་ཕྱགས་སྐྱིགས་ ཀྱིབ་དམ་དང་ ཤེལ་དམ་ ལྕགས་ཏེན་གྱིས་བཟོ་མི་ བཟའ་འཐུང་གི་ཏོད་ཚུ་ཡང་ ག་ཏེ་ལྗོད་ས་ལས་ཕར་ མཐོངམ་ཨིན་རུང་ ད་རེས་འབདཝ་ད་ རག་རོག་ཚོང་འབྲེལ་འཐབ་མི་ཚུ་གིས་ བསྡུ་བསྒྲིམ་འབད་དེ་ བསྐྱར་བཟོ་འབད་ནིའི་ལས་འགུལ་ འགོ་བཙུགས་མི་ལུ་བརྟེན་ མིག་གིས་མཐོངསར་ མེདཔ་ཨིན་མས།

མདོར་བསྡུ་བ་ཅིན་ རུལ་བཏུབ་དང་མ་བཏུབ་པའི་ ཕྱགས་སྐྱིགས་རག་རོག་ཚུ་ དེངསང་གི་ ཐབས་རིག་ལག་ལེན་འཐབ་མི་ལུ་བརྟེན་ དངཔ་ འོང་འབབ་བཟོ་ཚུགས་པའི་ཁར། གཉིས་པ་ ཕྱགས་སྐྱིགས་ཚུ་ལུ་བརྟེན་པའི་ བཙོག་བླུང་མར་ཕབ་

རྒྱབ་རྟགས་ནི། གསུམ་པ་ཟེར་ལྟ་དུ་ མཐའ་འཁོར་གནས་སྐངས་ གཅོང་སྦྲ་དང་ལྡན་འབད་ དཔག་རྟགས་པའི་ ཚན་ཁྲབ་སྦེན་པའི་ཀུན་གསལ་ནང་ལས་ཨེན།)

དྲི་བ་དང་པ། **ལན་གདམ་ཁ་ཅན།** **[ɣxч=ч]**

འོག་གི་དྲི་བ་རེ་ལུ་ལན་ གཅ་གཉ་ང ༤ ཡོད་ས་ལས་ལན་ངོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ གཅ་རྟགས་ཀྱ་སྒྲིར་ཐིག་ ○ དེ་ བཟུམ་བཀལ།

ɣ. སྤྱིར་གཏང་འཛི་རྩོམ་ལུ་དབྱེ་བ་གཉིས་ཡོད་མི་འདི་

ཀ རྒྱུད་སྐུལ་དང་རྩོད་གླེང་གཉིས་ཨིན།

ཁ འོ་རྒྱས་དང་འགྲེལ་བཤད་གཉིས་ཨིན།

ག དངོས་བྱང་དང་འཆར་སྣང་གཉིས་ཨིན།

ང ཁྱབས་བཤད་དང་འཆར་སྣང་གཉིས་ཨིན།

ɤ. འབྲེལ་ཡོད་དབང་འཛིན་ཞེར་མི་འདི་

ཀ ཁོམ་སྡེ་ཕྱགས་སྐྱེགས་འཛིན་སྐྱོང་ཡིག་ཚང་ལུ་གོ་ནི་ཨིན།

ཁ རྩོང་ཁག་ཕྱགས་སྐྱེགས་འཛིན་སྐྱོང་ཡིག་ཚང་ལུ་གོ་ནི་ཨིན།

ག རྒེད་འོག་ཕྱགས་སྐྱེགས་འཛིན་སྐྱོང་ཡིག་ཚང་ལུ་གོ་ནི་ཨིན།

ང སློབ་གྲྭའི་ཕྱགས་སྐྱེགས་འཛིན་སྐྱོང་ཡིག་ཚང་ལུ་གོ་ནི་ཨིན།

ɜ. ཕྱགས་སྐྱེགས་ལུ་བརྟེན་པའི་ བཅོག་རྒྱང་འདི་གིས་ གཅོ་བོ་ར་

ཀ གཟུགས་ཁཚས་འཕྲོད་བསྟེན་ལུ་གནོད་འོང་།

ཁ མཐའ་འཁོར་གནས་སྐངས་ལུ་གནོད་འོང་།

ག གཅང་སྦྲ་འཕྲོད་བསྟེན་ལུ་གནོད་འོང་།

ང དབྱགས་གཏོང་ལེན་ལུ་གནོད་འོང་།

ɥ. ཕྱགས་སྐྱེགས་འཛིན་སྐྱོང་ སྐྱར་བཅོས་ཐབས་རིག་འདི་གིས་ གཅོ་བོ་ར་

ཀ ཚོང་སྐྱར་ཐབས་ལམ་ལུ་ཡན་ཐོགས་འོང་།

ཁ མི་སྟེ་འོང་འབབ་བཟོ་ནི་ལུ་ཡན་ཐོགས་འོང་།

ག ཁོམ་སྡེ་གཅང་སྦྲ་ཡར་རྒྱས་ལུ་ཡན་ཐོགས་འོང་།

ང་ གསོ་བའི་གནས་སྐྱངས་ཡར་དྲག་ལུ་ཁན་ཐོགས་འོང།

༤. འོག་གི་ཚུ་ལས་ ཕྱག་སྟེགས་འཛིན་སྒོང་གི་ ཐབས་ལམ་དྲག་ཤོས་ར་

ཀ ཞིམ་བཤལ་ཏེ་ ཕྱག་སྟེགས་བསྡུ་ལེན་འབད་ནི་འདི་ཨིན།

ཁ ཕྱག་སྟེགས་བླུགས་སའི་ཅོད་བཟོ་བཙུག་ནི་འདི་ཨིན།

ག རང་སོའི་ཕྱག་སྟེགས་མེ་གཏང་བཙུག་ནི་འདི་ཨིན།

ང ཕྱག་སྟེགས་ཕྱི་སེལ་ཆུབ་སྟེ་ བཀོ་བཙུག་ནི་འདི་ཨིན།

དྲི་བ་གཉིས་པ། **ལན་ཐུང་།** **[༡x༥=༡༠]**

འོག་གི་ དྲི་བ་ ༥ ལས་ ༣ གདམ་ཁ་ཆུབ་སྟེ་ ལན་བྱིས།

༡. རྒྱལ་བདུབ་པའི་ཕྱགས་སྟེགས་ གཉིས་ཀྱི་མིང་དང་ རྒྱལ་མ་བདུབ་པའི་ཕྱགས་སྟེགས་ གཉིས་ཀྱི་མིང་བྱིས།

༢. འབྲི་རྩོམ་གྱི་ མཇུག་བསྡུ་བྱེ་བའི་སྐབས་ གཅིར་ཚུད་པ་སྟེ་ བྱེ་དགོཔ་ཨིན་ན?

๓. འོག་གི་ མིངཚོག་ཚུ་གི་ འགྲེལ་བཤད་ ཐུང་ཀུ་རེ་རུབ།

ཀ) ཕྱི་སེལ་རུབ།		
ཁ) གཞི་བཙུགས།		
ག) མགོ་འདོ་དེ།		
ང) ཕན་ཐུན།		

๔. ཕྱགས་སྟེགས་འཛོན་སྐྱོང་ འབབ་ཐངས་ལུ་ ཉེ་མ་དང་ དཔེས་ཀྱི་བར་ནའི་ ཁྱད་པར་བྱེས།

๔. ཆོད་ཀྱིས་འབད་བ་ཅིན་ འཛེལ་ཡོད་དང་འཛོན་གྱིས་ ཕྱགས་སྐེགས་འཛོན་སྐྱོང་འཐབ་ཐངས་ཀྱི་ ཐབས་རིག་གསར་པ་བཏོན་མི་འདི་ལུ་ རྒྱབ་སྐྱོར་ཡོད་གཅ? གཅ་ཅི་འབད?

དྲི་བ་གསུམ་པ། **ལན་རིད།** **[๓๐]**

འོག་གི་ དྲི་བ་ ๑ ལས་๓ གདམ་ཁ་རྒྱབ་སྟེ་ ལན་བྱེས།

๓. རྒྱལ་ཁབ་ཕྱི་ཁ་ལས་ ཚོང་ནང་འདྲེན་འབད་མི་ཚུ་ལས་བརྟེན་ཏེ་འཐོན་པའི་ ཕྱག་སྐྱེགས་ཚུ་ མར་ཕབ་འབད་ནི་ཡིན་ལུ་ ཐབས་ཤེས་གཅ་ཅི་ར་ བོན་བཏུབ་ནི་བཟུམ་ཚོར་ཞུ་མས་གོ? བསམ་འཆར་བྱེས། [๓๐]

༣. ཁྱོད་ཀྱིས་འབད་བ་ཅིན་ མཐའ་འཁོར་གཙང་སྦྲ་བཞག་ནིའི་དོན་ལུ་ མི་མང་ཕྱུག་བདར་གྱི་ལས་རིམ་ འགོ་འདྲེན་འཐབ་ནི་དང་ རྒྱང་མཐོང་དང་ གསར་ཤོག་ཚུ་ནང་ གོ་བརྡ་སྤྲེལ་ནི་གཉིས་ལས་ ག་འདི་དྲག་ནི་མས་གོ? ག་ཅི་འབད? [༡༠]

ཞབས་ཁྲ། འོག་མིན་ཞིང་བཀོད་འདྲ་བའི།། དཔལ་ལྡན་འབྲུག་པའི་རྒྱལ་ཁབ།། དགའ་སྐྱིད་ཕུན་སུམ་ཚོགས་པའི།། རྟེན་འབྲེལ་སྡར་ལས་བཟང་སོང་།། ནང་གི་ནོར་བུ་འདྲ་བ།། མངའ་བདག་སྐུ་ཚེ་བརྟན་པོག། ཕྱི་ཡི་ལྷགས་རི་འདྲ་བ།། བློན་འབངས་དར་ཞིང་རྒྱས་པོག། ཚོས་སྲིད་ལུགས་གཉིས་བསྟན་པ།། མི་ཉམས་ཡུན་དུ་གནས་པོག། རྒྱལ་ཁབ་མངའ་ཐང་ཡངས་འབྱོར།། ཡར་རྒྱས་གོང་འཕེལ་གནང་པོག། ནང་གི་ནོར་བུ་འདྲ་བ།། མངའ་བདག་སྐུ་ཚེ་བརྟན་པོག། ཕྱི་ཡི་ལྷགས་རི་འདྲ་བ།། བློན་འབངས་དར་ཞིང་རྒྱས་པོག། སངས་རྒྱས་བསྟན་པའི་སྲོག་ཤིང་།། དགེ་འདུན་འདུས་པའི་སྡེ་ཚོགས།། ཚོས་ཀྱི་འཁོར་ལོ་བསྐོར་ཞིང་།། འགྲོ་རྣམས་ཐར་པར་འཇེག་པོག། (ཁྲངས་གཏུགས། རྒྱ་དེ་གཞོན་པའི་དགའ་སྟོན། རྒྱལ་གཞུང་བློན་གར་སྒོ་སྐྱོང་ལྷ་བ་༢༠༡༤།)	
བློ་ཟླ། ཁྱོད་ཤིང་ཆེན་སྡོང་ཡོའི་རྩེ་ལྷ། །ང་ཁུ་བྱུག་སྡོན་མོ་འཁོར་ཚོ། །སེམས་དགའ་བའི་བསུ་བ་འབད་དེ། ། ཡིད་འཚོམ་པའི་མཆོད་པ་ཟེར་ཁ་དེ། །སྒོ་འཕེལ་བའི་ཉམས་ཅིག་ཤར་ཁ་མས། །དེ་ཙིན་རྩང་འཕྲལ་འཕྲལ་བྱང་ལས། ། རྐྱེན་དན་པའི་རླུང་ཆེན་འཕྱུག་དེ། །ཁྱོད་ཤིང་ཆེན་ཡོམ་ཡོམ་སྤུར་ཏེ། །ང་ཁུ་བྱུག་ས་ལུ་མི་སྤུད་ཀ། (ཁྲངས་གཏུགས། བློ་ཟེ་གསར་རྩོམ་སྡར་སྲོལ་བཏེགས་པའི་ཀ་བ། ཀུན་བཟང་རྡོ་རྗེ། ༢༠༡༤ རྩོད་ཁ་གོང་འཕེལ་ལྷན་ཚོགས།)	

དྲི་བ་དང་པ། **ལན་གདམ་ཁ་ཅན།** [ɾɣ५=५]

འོག་གི་དྲི་བ་རེ་ལུ་ལན་ ཀ་ཁ་གུ་ང་ཹ ཡོད་ས་ལས་ལན་ངོམ་འདི་ གདམ་ཁ་རྐྱབ་སྟེ་ ཀ་རྟགས་ཀྱི་སྒྲིང་ཕིག་ ○ དེ་ བཟུམ་བཀལ།

༡. སྟན་རྩོམ་ཟེར་མི་འདི་

ཀ ཚོག་གི་ཉམས་འཁྲུལ་སི་སི་ཅིག་ལུ་གོཕ་ཙིན།

ཁ ཚོག་གི་ཉམས་སྡུན་སྡུམ་ཚོགས་ཀྱག་ཀྱ་ཅིག་ལུ་གོཕ་ཙིན།

ག ཚོག་གི་ཉམས་ཏྲན་ཀྱངཀྱ་ལུ་གོཕ་ཙིན།

ང ཚོག་གི་ཉམས་འཇིགས་སྐངཆེ་སི་སི་ཅིག་ལུ་གོཕ་ཙིན།

༢. གོང་གི་ཞབས་ཁྲའི་ བཤྱོད་དོན་འདི་

ཀ ནད་སྨུག་འཁྲུག་རྩོད་ཞི་བའི་སྒྲིན་ཚིག་ཙིན།

ཁ སྐུབས་རྗེ་སྐུ་ཚེ་རིང་བཅུག་ཟེར་བའི་སྒྲིན་ཚིག་ཙིན།

ཀ ཆུལ་ཁབ་གོང་འཕེལ་འགྱོ་བ་ཆུག་ཟེར་བའི་སྒོན་ཆོག་ཨིན།

ང ཆུལ་བློན་འབངས་གསུམ་དར་ཞིང་ཆུས་པའི་སྒོན་ཆོག་ཨིན།

༣. ལྷག་གི་ ཞབས་ཏུ་ཆོགས་བཅད་ལྟ་བའི་ བཅུད་དོན་འདི་

ཀ ནང་པ་སངས་ཆུས་ཀྱི་བསྟན་པ་འདི་ཆུལ་ཁབ་ཀྱི་སྲོག་ཤིང་ཨིན་ཟེར་བའི་དོན་ཨིན།

ཁ འཕགས་པའི་དགེ་འདུན་གྱིས་སེམས་ཅན་ཚུ་ཐར་པར་འཇེན་པའི་དོན་ཨིན།

ག འབངས་མི་སེར་ཚུ་གིས་དམ་པའི་ཆོས་བསྟུབ་དགོ་པའི་དོན་ཨིན།

ང སངས་ཆུས་ཀྱིས་ཆོས་ཀྱི་འཁོར་ལོ་བསྐོར་བའི་དོན་ཨིན།

༤. སྐྱན་རྩོམ་གྱི་ཤེས་ཡོན་འདི་ གཅིའི་དོན་ལུ་ ལག་ལེན་འཐབ་དགོ་པ་སྟེ?

ཀ ཆོག་གི་ཉམས་སྤུན་སུམ་ཆོགས་ཏོ་ཏོ་སྦེ་སྟབ་ཚུགས་ནིའི་དོན་ལུ།

ཁ གཞན་གྱི་སེམས་བརྒྱུནིའི་དོན་ལུ།

ག རྩོམ་རྒྱབ་ཤེས་ནིའི་དོན་ལུ།

ང བློ་ཟེ་ རྩངམོ་ དཔེ་གཏམ་ རྩོམ་ཚུ་ རྒྱབ་ཤེས་ནིའི་དོན་ལུ།

༥. བློ་ཟེ་དང་ རྩངམོ་གཉིས་ལུ་

ཀ གདངས་དབྱངས་འཐེན་ཐངས་ཀྱི་ཁྱད་པར་ཡོད།

ཁ བསྐོར་གཏམ་ཡོད་མེད་ཀྱི་ཁྱད་པར་ཡོད།

ག ཚ་མོའི་རྣམ་འགྱུར་གྱི་ཁྱད་པར་ཡོད།

ང དཔེ་དངདོན་གྱི་ཁྱད་པར་ཡོད།

དྲི་བ་གཉིས་པ། **ལན་སྦྱངཔ།** [ཉxཀ=ཅ๐]

འོག་གི་ དྲི་བ་ ལན་བྱིས། ༥ གི་རའི་ ལན་བྱིས།

ཅ. གོང་གི་ བློ་ཟེ་ནང་བཀོད་ཡོད་པའི་ དཔེ་དེ་གིས་ དོན་དག་གཅོ་བོ་ གཅིའི་སྟོན་མ་སྟེ?

๙. འོག་གི་རྩོམ་ ཚོགས་བཅད་གཅིག་གི་ འགྲེལ་བཤད་ རྩོད་ཁའི་ནང་བྱེས།

དམ་པའི་སྐྱེ་བོ་ཉམ་ཐག་ཀྱང་ །ཚོས་དང་འགལ་བའི་ལས་མི་བྱེད། ।

ཚར་འདོད་བྱེད་སྐོམ་ན་ཡང་ །ས་ལ་བབས་པའི་ཆུམི་འཐུང་། ।

๚. འོག་གི་ མིང་ཚིག་ཚུ་ལག་ལེན་འཐབ་སྟེ་ རྒྱལ་ཁབ་ལུ་བསྟོད་པའི་རྩོམ་ ཚོག་འབྲུ་དྲུག་མ་འབད་མི་ ཚོགས་བཅད་གཅིག་བྱེས།

སྨན་ལྷྱེངས། ཞིང་ཁམས། ན་གཞོན། གོང་འཕེལ། ཆོས་ལྷན། དགའ། ཤེས་ཡོན། སྐྱེས།

๛. འོག་ལུ་བཀོད་དེ་ཡོད་པའི་ གོ་དོན་དང་མིང་གཉིས་ མཐུན་སྒྲིག་འབད་དེ་ ཀ་ཤུགས་ས་སྟོང་ནང་བྱེས།

(གོ་དོན)	(མིང)	
༡- ནོར་བུའི་རིགས་ཚུ་གི་འབྱུང་གནས།	ཀ) ལེགས་བཤད།	
༢- འཛམ་གླིང་འགྲོ་བ་ཡོངས་ཀྱི་མིག་ཏོ།	ཁ) འཇའ་ཚོན།	
༣- ཆོས་དང་འཇིག་རྟེན་གྱི་རྣམ་གཞག་སྟོན་མི།	ག) རྒྱ་མཚོ་ཆེན་པོ།	
༤- རྒྱུ་རྐྱེན་ལེ་ཤ་ཚོགས་པའི་མཐོང་སྣང་།	ང) ཁུ་བྱུག།	
	ཅ) ཉི་མ།	

ལན།

(གོ་དོན)	(མིང)	
༡- ནོར་བུའི་རིགས་ཚུ་གི་འབྱུང་གནས།		
༢- འཛམ་གླིང་འགྲོ་བ་ཡོངས་ཀྱི་མིག་ཏོ།		
༣- ཆོས་དང་འཇིག་རྟེན་གྱི་རྣམ་གཞག་སྟོན་མི།		
༤- རྒྱུ་རྐྱེན་ལེ་ཤ་ཚོགས་པའི་མཐོང་སྣང་།		

༥. དཔེས་ནདས་པ་ ན་གཞོན་མངའ་ཤོས་ཅིག་གིས་ད་ ཞབས་ཁ་གཤུང་སྐྱ་དང་ བོད་སྐྱ་གཉིས་ལས་འདི་ རིག་གསར་ལུ་ སྟོ་བ་སྟོམ་བསྐྱེད་མི་འདི་ གཅི་འབད་ཡིན་ན? ཁྱབས་བཀལ།

དྲི་བ་གསུམ་པ། **ལན་རིད།** **[༡༠]**

འོག་གི་ དྲི་བ་ ༢ ལས་ ༡ གདམ་ཁ་རྐྱབ་སྟེ་ ལན་བྱིས།

༡. ཁྱོད་ཀྱི་སྐུ་གཟུགས་འདི་ ཧྥ་རི་སྐྱུག་མ་བཟུམ་ གཅིག་བ་ མཉེན་ཁུག་ཆེ་བས། ཁྱོད་ཀྱི་གསུང་སྐད་འདི་ པི་ཕང་ [༡༠]

རྒྱུ་གྲིང་གི་སྐད་བརྡུམ་ གཅི་བ་ཅན་པས། ཁྱོད་ཀྱི་ཞལ་རས་འདི་ ཚོས་བཅོ་ལྔའི་ ཟླ་ཤ་བཟུམ་ གཅི་བ་ལེགས་པས། ཁྱོད་དང་གཅིག་ཁར་སྡོད་པའི་དུས་ཚོད་འདི་ ཡར་ལྷའི་ཞེང་ཁམས་ནང་ལྷོད་ལྷོད་པ་བཟུམ་དུ། ཁྱོད་མཐོང་ནི་མེད་པའི་དུས་ཚོད་འདི་ མར་དམྱལ་བའི་གཡུས་ལུ་ལྷོད་ལྷོད་པ་བཟུམ་ཞིན་མས། ཟེར་བའི་ཚིག་ལྟག་པ་འདི་ ཚོགས་བཅད་ ཀཱ་ཉེས་ནང་ བསྒྲུར་ཏེ་བྱེས།

ཅ. སྐབས་རྩོམ་ལྷབ་སྦྱང་འབད་དགོ་མི་འདི་ རྒྱུ་མཚན་གཅི་ཡིས་བཏེན་ཏེ་ཞིན་ན་ བསམ་འཆར་དོན་མཚམས་ཅ [ཅ૦] བྱེས།

སྟེ་ཚན་གཉ། སྒྲུབ་དང་གཏམ་རྒྱུད། [༡༤]

དྲི་བ་དང་པ། ལན་གདམ་ཁ་ཅན། [ɔxɥ=ɥ]

འོག་གི་སྒྲུབ་གི་འབྲུང་རིམ་འདི་ ལྷག་ཞིན་མ་ལས་ དྲི་བ་རེ་ལྟ་ལན་ ཀ་ཁ་གा་ང་ཉ ཡོད་ས་ལས་ལན་ངོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྟགས་གུ་སྐོར་ཐིག་ ○ དེ་བཟུམ་བཀལ།

ཉེ་མཚན་གཅིག་ལྟ་ བོད་རྒྱང་མེད་རྒྱང་ བ་རྒྱ་ཚམ་ ཙོམ་གा་ནི་བ་ལེགས་ཤོམ་ ཐྲིན་མི་ཅིག་ཡོད་པ་མས། ཞལ་འདི་ བ་འདི་ལྟ་བཏེན་ཏེ་ དགའ་ཏོག་ཏོ་སྦྲེ་སྟོད་པའི་བར་ན་ ཚར་གཅིག་འབད་ཐུབ་ད་ བ་འདི་ གར་སོང་མེད་པར་ འབྱང་ད་ ནུག། ཞལ་འདི་ བ་འཚོལ་མ་ཐོབ་པར་ ན་འཐན་དབྱགས་འགམ་སྟེ་ ཚལ་མ་ནང་ལས་ཕར་འཚོལ་བར་འགྱོ་ཐུ་ད་ ལམ་ཁར་ གཅན་གཟན་སྐྱ་དང་ཙུད་ནུག། ཁོ་གིས་ སྐྱ་མཐོངམ་ཅིག་ ཐུག་འགྱོ་ནི་འབད་ཐུ་ད་ སྐྱ་གིས་ཡང་ ཞལ་འདི་ མཐོང་ནུག། ཞལ་འདི་གི་ནི་ཡང་ འབད་སར་མ་མཐོངཔར་ སྟོད་པ་ཅིག་གི་བར་ན་ སྐྱ་འདི་གིས་ ཞལ་འདི་ལུ་ མཆོངས་ད་ནུག།

༢. སྡུང་རྩེདཔ་ཟེར་མི་འདི་

ཀ སྡུང་གཉང་མི་ཚུ་ལུ་གོཕ་ཨིན།

ཁ སྡུང་དང་འཁྲིལ་ཏེ་ འཁྲབ་རྩེད་འབད་མི་ལུ་ གོཕ་ཨིན།

ག སྡུང་དང་འཁྲིལ་ཏེ་ རྩེདམ་རྩེ་མི་ལུ་གོཕ་ཨིན།

ང སྡུང་ནང་ལུ་ འགན་ཁག་འབག་སྟེ་ འཐོན་མི་ཚུ་ལུ་གོཕ་ཨིན།

༣. གོང་གི་སྡུང་དེ་ནང་གི་ རྟོགས་གཞི་ག་ཅི་ཨིན་མས་གོ?

ཀ སྟག་དང་འཕྱད་མི་འདི་ཨིན་མས།

ཁ བ་རྒྱ་ཚམོ་འབྲུང་མི་འདི་ཨིན་མས།

ག སྟག་གིས་ ཨཡ་ལུ་མཆོངས་འོང་མི་འདི་ཨིན་མས།

ང ཨཡ་དབྱགས་འགམ་མི་འདི་ཨིན་མས།

༤. སྡུང་གི་འབྲུང་རིམ་འདི་ནང་ ཚོར་ཤུགས་ཆེ་ཤོས་ར་

ཀ བ་རྒྱ་ཚམོ་འབྲུངམ་དང་འབྲུངམ་ཨིན་མས།

ཁ གཅན་གཟན་སྟག་དང་འཕྱདཔ་དང་ འབྲུངམ་ཨིན་མས།

ག བ་གིས་ཨོམ་ལེགས་ཤོམ་བྱིནམ་དང་ འབྲུངམ་ཨིན་མས།

ང སྟག་མཆོངས་ཏེ་འོངམ་དང་འབྲུངམ་ཨིན་མས།

༥. སྡུང་བྱི་ཤེས་མི་ཅིག་ལུ་འགྱུར་དགོ་པ་ཅིན་

ཀ གཞན་གྱིས་བྱིས་ཡོད་མི་ སྡུང་གི་དེ་མངམང་སྟག་དགོ།

ཁ རངཡང་ སྡུང་བྱི་ནི་ལུ་ སྤྱོ་བ་བསྐྱེད་དགོ།

ག སྡུང་གི་ཚ་ཤས་ཚུ་གི་སྐྱེར་ལས་ ལེགས་ཤོམ་སྦེ་ལྷབ་དགོ།

ང གོང་གི་གསུམ་ཆ་ར་འབད་དགོ།

༦. སྡུང་ལུ་ ལྷག་མི་ཚུ་གིས་ དགའ་དགོ་པ་ཅིན་ སྡུང་འདི་ནང་ལུ།

ཀ སྡུང་གི་རྟོགས་གཞི་ ལེགས་ཤོམ་སྦེ་བཙུགས་དགོ།

ཁ སྡུང་རྩེད་པའི་སྐྱེར་ལས་ བཤད་པ་ལེགས་ཤོམ་རྒྱབ་དགོ།

ག སྡུང་གི་བཟོ་བཀོད་ལེགས་ཤོམ་སྦེ་ཚུད་དགོ།

ང སྡུང་གི་ཚ་ཤས་ཚུ་ ལེགས་ཤོམ་སྦེ་ཚུད་དགོ།

འོག་གི་ སྡུང་ཐུང་ཀུ་འདི་ ཕྱག་ཞེན་མ་ལས་"དྲི་བ་ ༤ བཀོད་ཡོད་མི་གཅིའི་ ལན་བྱེས།

སྔོན་མ་འདས་པའི་དུས་ལུ་ ཤ་ར་ཏ་སིའི་རྒྱལ་པོ་ཚངས་པའི་བྱིན་ཅར་མི་ བསམ་པ་བཟང་པོ། གཡུ་ཡང་ཟན། སྐྱིང་རྩེ་སྦྲོམ། ཆོས་ལུ་མོས་པ། མི་ལུ་བྱམས། གནེ་ལུ་ཡང་མ་ཆགས་པར་ སྦྱིན་པ་གཏང་མི་ཅིག་གིས་ རྒྱལ་སྲིད་བསྐྱངས་པའི་སྐབས་ལུ། སུ་གེ་སྦྲོམ་ཐོན་ཏེ་ མི་གེ་ཡ་ར་ ཁྲོཤ་བཀྱེས་ ཁ་སྐོམ་སྟེ་ ཡི་དྭགས་བཟུམ་སོང་སྦྲེ་ ཆ་མཉམ་ཤེ་མ་རན་མ་ལས་ ཤེ་ངོའདྲོགས་ཏེ་ རྒྱལ་པོའི་སྤྲོ་ལོགས་ཁར་འོངས་སྦྲེ་ ཕྱོགས་ལས་རྒྱལ་གྱུར་ཅིག། སྐུ་ཆེ་རིང་གྱུར་ཅིག། ཟེར་བསྟོད་པ་ཕུལ་ཞིན་མ་ལས། ང་བཅས་ སུ་གེ་གི་ འཇིགས་པ་དེ་ལས་ གོལ་བའི་ཐབས་ཅིག་ མཛད་དེ་བཀའ་དྲིན་ བསྐྱང་ ཟེར་ཞུ་ནུག།

དེ་ལས་ རྒྱལ་པོ་གིས་གཉེར་པ་འབོ་སྟེ་ ང་བཅས་རར་དང་ མི་ཆ་མཉམ་ལུ་ལངཔའི་ གཉེར་ཚོངཡོད་ག་ ཟེར་བཀའ་ གནང་མ་ཅིག། གཉེར་པ་དང་ ཆེས་དཔོན་གྱིས་ ཆེས་རྒྱབ་སྟེ་བཙུལ་དུ་ལུ་ མི་གཞན་མི་ཚུ་ལུ་ ཉེནམོ་རེ་ལུ་ཁམ་ཏོ་རེ་ དང་། རྒྱལ་པོ་ལུ་ ཁམ་ཏོག་གཉེས་གཉེས་འཐོབ་པས་ ཟེར་ཞུ་ནུག། རྒྱལ་པོ་གིས་མི་ཚུ་ལུ་ ཁྲེད་ཉེནམ་རེ་འཆར་ར་ ཚོ་བྱང་ནང་འོངས་ཏེ་ ཁམ་ཏོག་རེ་བཟའ་སྟེ་སོང་ཞེག། ཟེར་གསུངས་ཏེ་ དེ་སྟེ་བཟའ་སྟོད་པ་ བྱམ་ཟེ་གཅིག་ ཆེས་དེ་ནང་མ་ཚུན་ལས་ རྒྱལཔོ་འབད་སར་བཅར་ཏེ་ གནང་ཏོ་ཡོད་ཨིནམ་ ངགི་ས་རྩ་ལས་མ་ཤེས། ང་ལུ་ཡང་ཁམ་ཏོ་རེ་ གསོལ་རས་ཞུ་གེ་ཟེར་ཞུ་ནུག།

དེ་ལས་རྒྱལཔོ་གིས་ ཁོ་རའི་སྐུ་སྐལ་ཁམ་ཏོག་གཉེས་ལས་ གཅིག་དེ་ལུ་བྱིན་པའི་བསྐང་ལས་ ཁོང་ད་ཡོན་གཡོག་མེད་ཡར་ ཁམ་ཏོག་རེ་འཁྲན་འཁྲ་འཚོམ་ཁ་ དལ་བརྒྱ་བྱིན་གྱིས་ཆོ་ད་བལྟ་ནི་སྟེ་ བྱམ་ཟེ་ཅིག་ལུ་སྤྱལ་ཏེ་ རྒྱལ་པོ་ལུ་ ང་ ལྷོམ་བཏུས་ཆི། ཁྲོད་ཀྱི་སྐལཔ་ ཁམ་ཏོག་གཅིགཔོ་དེ་ དལ་གནང་ཟེར་ཞུཔ་དང་ རྒྱལ་པོ་སྐྱིང་རྩེ་ཆེའའི་དབང་གིས་ རང་གི་སྡོག་ཡང་བློས་གཏང་ནི་སྟེ་ ཁམ་ཏོག་གཅིགཔོ་དེ་ཡང་ བྱམ་ཟེ་དེ་ལུ་གནང་སྟེ་ ཞག་བྱུག་སྤྱུང་གནས་བསྡུངས་ སྟེ་བཞུགས་ནུག།

དོ་རུང་རྒྱལཔོ་ཁོ་ར་ མི་དེ་ཚུ་ ཁམ་ཏོག་ཅེ་འབད་མི་འདི་ བཟའཔ་གཟིགསཔ་དང་ ཐུགས་ག་ཅི་འདེ་ དགེས་ནི་དེ་གིས་ བརྒྱ་བྱིན་ཁོ་རའི་གཟུགས་ངོཚ་ལུ་ཐུར་ཏེ་ རྒྱལཔོ་ཁྲོད་ ལེགས་ཤོམ་འདུག། ཁྲོད་ཀྱིས་ དཀའཔ་ནེ་སྟེ་སྤུད་ནི་དེ་གིས་ ངས་མས་དགའ་ཡི། མི་ཚུ་ལུ་ རྒྱལཔོ་ཁྲོད་ཡོད་ནི་དེ་གིས་ ཁོང་ལུ་ གོགས་རམ་སྟོམ་བྱུང་ཡི། ད་ སོན་དེ་ཚུ་བཏང་ ཞིག་ཟེར་ ལུང་སྟོགས་ག་ཏེ་ཡང་གསུངས་ཞིག། ཞག་བདུན་ལུ་ངགིས་ འབྱ་དེ་ཚུ་སྐྱེ་ནི་གི་ ཆར་པ་ཚབ་ཁོང་ཟེར་ཞུ་ནུག། རྒྱལཔོ་གིས་ནེ་སྟེ་ འབད་བཅུགཔ་ད་ བརྒྱ་བྱིན་གྱིས་ཡང་ ཆར་པ་ཚབ་སྟེ་ ལོ་སྡུགས་གང་བ་ལེགས་ཏེ་ སྡུ་གེ་ཞི་ནུག་གོ།།

༡. སྡུང་འདི་ནང་གི་རྒྱལཔོ་ལུ་ ལེགས་པའི་ཁྲད་ཆོས་ ག་ཅི་ར་འདུག་གོ?

๙. སྒྲུབ་དེ་ནང་གི་མིང་ཚིག་ **ཆོས་ལྷ་མོས་པ། སྐུ་གེ་ཐོན།** ཟེར་མི་འདི་ ཀ་ཅི་ལྟ་གོ་ཕྱ་ཙམ་ན་ དོན་དཀ་བྱིས།

๙. སྒྲུབ་དེ་ནང་ལྟ་ ལྷོ་རྒྱིས་ནང་མ་ཚུད་མི་ རྒྱིས་པ་འདི་ ཁྱོད་ཚེན་པ་ཅིན་ ཀ་ཅི་ར་འབད་འབད་ཕ་འོང་?

৯. སྐུང་འདི་ནང་གི་ རྒྱལ་པོ་འདི་ལུ་ རྒྱལ་ཁབ་ཀྱི་སྲོལ་ཆུང་དང་ མི་སེར་མང་ཉུང་ གཅིག་ འོང་ནི་བཟུམ་ ཅིག་འདུག་གོ?

৯. སུ་གེའི་སྤྱག་བསྡལ་མི་འབྱུང་ནིའི་དོན་ལུ་ ཐབས་དང་གནས་སྐབས་ གཅིག་བཏང་བ་ཅིན་ དགའ་འོང་གི?

དྲི་བ་གསུམ་པ། **ལན་རིང།** **[๑๐]**

འོག་གི་ དྲི་བ་ ༢ ལས་ ༡ གདམ་ཁ་ཆུབ་སྟེ་ ལན་བྱིས།

๑. ཨཁ་འདི་ གཅིག་ཡང་ འབད་སའི་ལམ་མ་མཐོང་བར་ སྟོད་པ་ཅིག་གི་བར་ན་ སྤྱག་འདི་གིས་ ཨཁ་འདི་ལུ་ [๑๐]

མཚོངས་དུན།། ཟེར་བའི་གནས་སྟངས་འདི་ སྤུང་སྐྲ་མི་ཚུ་ལུ་ ངོམ་མཐོངམཐོངམ་བཟུམ་སྟེ་ ཚོར་བཙུག་ནིའི་དོན་ལུ་ ཆོག་གི་སྤྲོས་བཏགས་ཏེ་བྱེས།

੨. སྟག་དང་ཙཱ་རུ་ཚམ་འབྲངམིའི་སྤུང་ནང་ལུ་ སྤུངགི་ཞེ་ཐབས་ཅིག་བཙུགས་ཏེ་ སྤུང་འཕྲོ་མཐུད་ ཐུང་ཀུ་ ཅིག་བྱེས། [੭੦]

ལྟེ་ཚན་དག ནང་ཚོས་བརྒྱ་མཐོད། [१५]

འོག་གི་ རྩ་ཚིག་ཚུ་དྲན་མ་བཏོན་ཏེ་ ལྷག་ཞིན་ལ་ལས་ དྲི་བ་ཚུ་གི་ལན་བྱིས།

སྡུག་བསྔལ་སྣ་ཚོགས་རྣམ་པ་ལམ་བུ་ཤི་ལྟར། །འཕྲལ་སྣང་བདེན་པར་གཟུང་བས་ཙ་ཐང་ཆད། ।	

དེ་ཕྱིར་མི་མཐུན་ཆུན་དང་འཕྲད་པའི་ཚེ། །འཁྲུལ་པར་ལྟ་བ་རྒྱལ་སྟས་ལག་ལེན་ཡིན། ། ཚུལ་ཁྲིམས་མེད་པར་རང་དོན་མི་འགྲུབ་ན། །གཞན་དོན་འགྲུབ་པར་འདོད་པ་གང་མོའི་གནས། ། དེ་ཕྱིར་སྒིད་པའི་འདུན་པ་མེད་པ་ཡི། །ཚུལ་ཁྲིམས་སྡུང་བ་རྒྱལ་སྟས་ལག་ལེན་ཡིན། ། རང་དོན་འབའ་ཞིག་སྒྲུབ་པའི་ཉན་རང་ཡང་། །མགོ་ལ་མེ་ཤོར་བཟློག་ལྟར་བསྟེན་མཛོང་ན། ། འགྲོ་ཀུན་དོན་དུ་ཡོན་ཏན་འཕྲུང་གནས་ཀྱི། །བསྟེན་འགྲུས་སྟོམ་པ་རྒྱལ་སྟས་ལག་ལེན་ཡིན། ། རྣེད་བཀུར་དབང་གིས་ཕན་ཚུན་སྟོད་འགྱུར་ཞིང་། །ཐོས་བསམ་བསྒོམ་པའི་བྱ་བ་ཉམས་འགྱུར་བའི། ། མཛའ་བཤེས་ཁྱིམ་དང་སྤྱིན་བདག་ཁྱིམ་རྣམས་ལ། །ཆགས་པ་སྤོང་བ་རྒྱལ་སྟས་ལག་ལེན་ཡིན། །	

དྲི་བ་དང་པ། **ལན་གདམ་ཁ་ཅན།** [ɔx५=५]

འོག་གི་དྲི་བ་ཅེ་ལྟ་ལན་ ཀ་ཁ་ག་ང་ཹ ཡོད་ས་ལས་ལན་ངོམ་འདི་ གདམ་ཁ་རྒྱབ་སྟེ་ ཀ་རྟགས་ཀྱི་སྒོར་ཐིག་ ○ དེ་བཟུམ་བཀལ།

१. སྡུག་བསྔལ་ཚུ་ འཁྲུལ་སྣང་ཞིན་པའི་དུས་

ཀ ཆུང་མ་འཕྱ་སའི་ མར་མེ་ལྟ་ བཀོད་ནུག།

ཁ རྒྱ་མཚོ་ཆེན་པོའི་ ཏ་རྣབས་ལྟ་ བཀོད་ནུག།

ག སྤང་གཤོང་ནང་གི་ མཛོས་པའི་མེ་ཏོག་ལྟ་ བཀོད་ནུག།

ང ཞའི་གི་རྩི་ལམ་ནང་ བྱ་ཤིལ་མཐོང་མི་ལྟ་ བཀོད་ནུག།

२. ཚུལ་ཁྲིམས་ ཟེར་མི་འདི་

ཀ གཞུང་གི་སྲིད་ཐུས་ལམ་ལུགས་དང་འཁྲིལ་ཏེ་འབད་མི་ལུ་གོམ་ཞིན།

ཁ འཛིག་རྟེན་པའི་ཐུ་སྲོད་དང་བསྟུན་ཏེ་འབད་མི་ལུ་གོམ་ཞིན།

ག དགེ་སྦྱིག་སྤང་བྱང་ཚུ་ཚུལ་བཞིན་དུ་འབད་མི་ལུ་གོམ་ཞིན།

ང ཕ་མའི་ལམ་སྲོལ་བདག་འཛིན་འབད་མི་ལུ་གོམ་ཞིན།

३. རྒྱལ་སྟས་ལག་ལེན་གྱི་ བརྟེད་དོན་གཅོ་བོ་འདི་

ཀ གཞན་ཕན་གྱི་སེམས་བསྐྱེད་པོག་ལས་གཞན་དོན་བསྒྲུབ་དགོས་འདི་ཞིན།

ཁ འཛིག་རྟེན་པའི་ཐུ་བཞག་ལུ་ཞེན་ཆགས་སྤང་ཐབས་འདི་ཞིན།

ག ངན་སོང་གསུམ་གྱི་སྡུག་བསྔལ་ལས་འགྲོལ་ཐབས་འདི་ཞིན།

ང དམ་པའི་ཆོས་ཡང་དག་པ་བསྒྲུབ་དགོས་འདི་ཞིན།

৯. བསམ་གཏན་བསྒོམ་པ་ཟེར་ སྒོམ་རྒྱབ་ནི་འདི་ ནམ་དང་ནམ་ར་ཁག་ཆེཤ་སྨོ?

ཀ ཆོས་འབདཤ་དང་ ཁག་ཆེཤ་ཨིན།

ཁ འཇིག་རྟེན་གྱི་ལུ་འབདཤ་དང་ ཁག་ཆེཤ་ཨིན།

ག ཆོས་དང་འཇིག་རྟེན་གྱི་ལུ་ གཅིའི་ནང་ ཁག་ཆེཤ་ཨིན།

ང ལུས་སྦྱོང་འབདཤ་དང་ ཁག་ཆེཤ་ཨིན།

৭. རྟེད་བཀུར་གྱི་དབང་གིས་ ཇོ་པ་ལེ་ཤ་འཐུང་ནི་འདི་

ཀ བློམ་ཆོསཔ་ཚུ་གི་ནང་འཁོད་ལུ་ཡོད་པ་ཨིན།

ཁ གཞུང་གཡོགཔ་ཚུ་གི་ནང་འཁོད་ལུ་ཡོད་པ་ཨིན།

ག མི་གནགཔ་ཚུ་གི་ནང་འཁོད་ལུ་ཡོད་པ་ཨིན།

ང མི་སྡེ་གཅིའི་ནང་འཁོད་ལུ་ཡོད་པ་ཨིན།

དྲི་བ་གཉིས་པ། ལན་ཐུང་། [৭x৭=৭০]

འོག་གི་ དྲི་བ་ ৫ ག་རའི ལན་བྱིས།

৭. བཟོད་པའི་ཤ་རོལ་ཏུ་ཕྱིན་པ་ཟེར་བའི་སྐོར་ལས་ བཤད་པ་བྱིས།

৭. མཛའ་བཤེས་ཀྱིམ་དང་སྤྱིན་བདག་ཀྱིམ་རྣམས་ལ། །ཆགས་པ་སྤོང་བ་རྒྱལ་སྲས་ལག་ལེན་ཡིན། །ཟེར་བའི་ཚོག་

ཤང་གཉིས་ཀྱི་ འགྲེལ་བཤད་བྱེས།

༣. རང་གིས་ ཚུལ་ཁྲིམས་ཡང་དག་པ་ཅིག་ མ་བསྒྲུབ་ཅིན་ གཞན་དོན་སྒྲུབ་ཐབས་མེད་ ཟེར་མི་འདི་ གཏེ་སྦེ་སྟོ?

༤. འཛིག་རྟེན་མི་གནགཔ་ཚུ་གི་ གནས་ཚད་ནང་ལུ་ ཚུལ་ཁྲིམས་ག་ཅི་བཟུམ་ཅིག་ བསྟུང་དགོཔ་འདུག་གོ?

๔. ཉན་ངང་དང་ བྱང་ཆུབ་སེམས་དཔའ་གཉིས་ཀྱི་ བཙོན་འགྲུས་སྒྲིད་ཐངས་ཀྱི་ ཞུད་པར་བྱེས།

དྲི་བ་གསུམ་པ། ལན་རིང། [๗๐]

འོག་གི་ དྲི་བ་༢ ལས་༣ གདམ་ཁ་ཆུབ་སྟེ་ ལན་བྱེས།

๑. རང་གི་འཐུལ་པ་རང་གིས་མ་བརྟག་ན། ཁོར་ཡའི་གཟུགས་ཀྱིས་ཆོས་མིན་ཟེད་སྲིད་པས། । ཟེར་དོ་བཟུམ་ རང་གི་འཐུལ་པའམ་འཛོལ་བ་འདི་ རང་གིས་ བརྟགས་ཤིང་དཔྱད་པ་དང་ མ་དཔྱད་པའི་ ཚན་གཉིད་ཀྱི་སྐོར་ ལས་ བསམ་འཆར་ཅིག་བྱེས། [๗๐]

๙. སེམས་ཅན་ཚུ་ དབ་སོང་གསུམ་གྱི་གནས་ལུ་སྐྱེས་ཏེ་ སྡུག་བསྔལ་སྣོང་དགོ་པའི་ རྒྱུ་མཚན་གཅི་སྟེ? ཁ་གསལ་འབད་བཞིས། [๑๐]

སློབ་རིམ་༡༠ པའི་རྩོང་ཁ་༢ པའི་དྲི་བཀོད་འཆར་གཞིའི་རེའུ་མིག་གི་དཔེ།

(༢༠༢༡)

རིག་རྩལ་ → / དོན་ཚན་ ↓	དྲི་བའི་སྐུགས་ཀྱི་ཡིད་ཚད།	ངན་ཤེས།	གོ་རྟོགས།	ལག་ལེན།	དབྱེ་དཔྱད།	དབྱེ་ཞིབ།	གསར་རྩོམ།	སྐུགས་བསྡོམས།
སྤེ་ཚན་ ཀ་ འབྲི་རྩོམ་ སྐུགས་༢༥།	དྲི་བ་༡ པ། ལན་གདམ་ཁ་ཅན་ སྐུགས་༩ །	༡ (༡)	༢ (༡)	༣ (༡)	༩,༥ (༡+༡)			༥ (༥)
	དྲི་བ་༢ པ། ལན་ཐུང་ སྐུགས་༡༠ །	༡ (༢)	༢,༣ (༢+༢)		༩ (༢)	༥ (༢)		༥ (༡༠)
▶	དྲི་བ་༣ པ། ལན་རིངམོ་སྐུགས་༣༠ །				༡ (༡༠)	༢ (༡༠)		༢(༢༠)
སྤེ་ཚན་ ཁ་ སྟན་ཚོམ་ སྐུགས་༢༥།	དྲི་བ་༡ པ། ལན་གདམ་ཁ་ཅན་ སྐུགས་༥ །	༡ (༡)	༢,༣ (༡+༡)	༩ (༡)	༥ (༡)			༥ (༥)
	དྲི་བ་༢ པ། ལན་ཐུང་ སྐུགས་༡༠ །		༡,༢ (༢+༢)	༣ (༢)	༩,༥ (༢+༢)			༥ (༡༠)
▶	དྲི་བ་༣ པ། ལན་རིངམོ་སྐུགས་༣༠ །			༡ (༡༠)		༢ (༡༠)		༢ (༢༠)
སྤེ་ཚན་ ཁ་ སྡུད་སྐུགས་༢༥།	དྲི་བ་༡ པ། ལན་གདམ་ཁ་ཅན་ སྐུགས་༥ །	༡ (༡)	༢,༣ (༡+༡)	༩ (༡)	༥ (༡)			༥ (༥)
	དྲི་བ་༢ པ། ལན་ཐུང་ སྐུགས་༡༠ །	༡ (༢)	༢ (༢)	༣ (༢)	༩,༥ (༢+༢)			༥ (༡༠)
▶	དྲི་བ་༣ པ། ལན་རིངམོ་སྐུགས་༣༠ །			༡ (༡༠)			༢ (༡༠)	༢ (༢༠)
སྤེ་ཚན་ ང་ ནང་ཚོས་བརྒྱ་མཐོང་ སྐུགས་༢༥།	དྲི་བ་༡ པ། ལན་གདམ་ཁ་ཅན་ སྐུགས་༥ །	༡ (༡)	༢,༣ (༡+༡)	༩ (༡)	༥ (༡)			༥ (༥)
	དྲི་བ་༢ པ། ལན་ཐུང་ སྐུགས་༡༠ །	༡ (༢)	༢,༣ (༢+༢)		༩,༥ (༢+༢)			༥ (༡༠)
	དྲི་བ་༣ པ། ལན་རིངམོ་སྐུགས་༣༠ །			༡ (༡༠)	༢ (༡༠)			༢ (༢༠)
ཡོངས་བསྡོམས་ →		༧ (༡༠)	༡༥ (༢༡)	༧ (༣༢)	༡༡ (༣ཀ)	༣ (༡༢)	༡ (༡༠)	༩༢ (༡༩༠)

ངན་གསོ། གྲུག་ཤད་ནང་ཡོད་མི་ཙམ་ཡིག་ཚུ་ སྐུགས་དང་ ཕྱི་ཁ་གི་ཚུ་ཏི་བའི་ཙམ་ཞིན།

RIGZHUNG (TAKTSE)

སྒོ་ཐ་སྐད་ཅིམ་༡༥ ཡ།

ཆོས་ཚན། སྲུན་རྒྱས་བསྡུས་བསྡོམས། ལྷོགས་གྱུབ་གཞི་བཞག་གི་དྲི་བ།

སྐུགས། ༡༠༠ ।

སྡེ་ཚན་ཀ་ཡ།སྐུགས་༡༥།	
བཀོད་རྒྱ། ངོག་གི་དྲི་བ་རེ་ལྟུ་ལན་ཀ་ཁ་ག་ང་བཞི་རེ་ཡོད་ས་ལས་ལན་ངོམ་འདི་གདམ་ཁ་རྒྱབ་སྡེ་ཀ་རྒྱས་གྱ་སྒོར་ཐིག་O དེ་བཟུམ་བཀལ།	[༡༥]
༡ འབྱུང་ཁུངས་ཆ་འབྲ་བའི་དཔེར་བརྗོད་འདི་"(**དྲན་ཤེས**) ཀ ཁྱིམ་ལས་མི། ཁ བློམ་ལས་ཆོས། ག བྱ་ལས་སྒོང་རྡོག། ང ཤིང་ལས་འབྲས་བུ།	
༢ འབོད་སྒྲ་ཅེར་མིའི་གོ་དོན་འདི""(**གོ་རྟོགས**) ཀ བོད་རྒྱལ་ཁབ་ཀྱི་སྒྲ་ལུ་སྒྲབ་ཚེན། ཁ འབོད་པ་གསལ་བྱེད་ཀྱི་སྒྲ་ལུ་སྒྲབ་ཚེན། ག མིང་གི་ཐོག་མཐའ་ལུ་སྒྱར་མི་ལུ་སྒྲབ་ཚེན། ང བདག་ལ་གསོན་ཅིག་གྲོགས་པོ་ཀུ་ཡེ་ལུ་སྒྲབ་ཚེན།	
༣ ལ་དོན་གྱི་ཐུད་ ལ་གིས་རྟེན་གནས་ལུ་འཚུག་པའི་དཔེ་ནི"(**ལག་ལེན**) ཀ ཉེར་ལྷ་ལ་ཆོགས་འཁོར་བསྐོར་ཞེས་བྱེ་དགོས། ཁ ལྷ་ཁང་ལ་མཆོད་པ་ཐུལ་ཞེས་བྱེ་དགོས། ག ལྷ་ཁང་ནང་ལ་འགྲོ་ཞེས་བྱེ་དགོས། ང ལྷ་ཁང་ལ་སྐུ་ཡོད་ཞེས་བྱེ་དགོས།	
ཅ དགག་སྒྲ་ཅེར་བའི་གོ་དོན་ནི"""(**གོ་རྟོགས**) ཀ མེནམ་འབད་དགག་པ་རྒྱབ་པའི་ཚོག་ཅིག་ལུ་སྒྲབ་ཚེན། ཁ ཚེནམ་འབད་སྒྲབ་པའི་ཚོག་ཅིག་ལུ་སྒྲབ་ཚེན། ག བདེན་པ་བཤད་པའི་ཚོག་ཅིག་ལུ་སྒྲབ་ཚེན། ང མ་ཅན་པའི་ཚོག་ཅིག་ལུ་སྒྲབ་ཚེན།	
༤ སྤྱི་སྒྲ་གི་དཔེར་བརྗོད་རྒྱབ་པ་ཅིན·····ཟེར་དོ་བཟུམ་ཚེན།(**ལག་ལེན**) ཀ རང་སྒོག་ཅིའི་ཕྱིར་དུ་གཅོད།	

	ཁ ལུ་འབད་མི་མི་འདི་གཅོ།	
	ག སངས་རྒྱས་ལས་ཆོས་ཞུ།	
	ང གཞུང་གཡོག་པ།	
༤	དེ་སྐྱ་དང་འདི་སྐྱ་གཉིས་ལུ་འཛུག་ཚུལ་གྱི་ཁྱད་པར་འདི་"།(དཔེ་དཥད)	
	ཀ ཕྱད་གཉིས་མ་འབྲ་བའི་ཁྱད་པར་ཡོད།	
	ཁ དུས་གསུམ་ལུ་འཛུག་ཚུལ་གྱི་ཁྱད་པར་ཡོད།	
	ག དོན་དག་མ་འབྲཕ་ལུ་འཛུག་ཚུལ་གྱི་ཁྱད་པར་ཡོད།	
	ང གང་ཟག་དང་དངོས་པོ་ལུ་འཛུག་ཚུལ་གྱི་ཁྱད་པར་ཡོད།	
༥	མིང་གཞིའི་ཡི་གུ་ཞེས་པའི་ངེས་ཚིག་ནི་	
	ཀ ཐ་སྙད་སྒྲུབ་པའི་གཞི་འབད་ནི་འདི་གིས་ཨིན།	
	ཁ རྟོད་ཚིག་ སྒྲུབ་པའི་གཞི་འབད་ནི་འདི་གིས་ཨིན།	
	ག དོན་མཚམས་ སྒྲུབ་པའི་གཞི་འབད་ནི་འདི་གིས་ཨིན།	
	ང ཚིག་མཚམས་ སྒྲུབ་པའི་གཞི་འབད་ནི་འདི་གིས་ཨིན།	
༦	གསལ་བྱེད་ལུ་ཐབས་ཀྱི་ཡིག་ཟེར་མི་འདི་	
	ཀ དབྱངས་སོགས་གཞན་ལ་བརྟེན་ནས་བརྗ་དོན་གསལ་བར་སྟོན་མི་གོ།	
	ཁ སྐྱ་གདངས་སྐ་ཚོགས་སུ་འགྱུར་ནས་བརྗ་དོན་གསལ་ བར་སྟོན་མི་གོ	
	ག ཚིག་གྲོགས་ གཞན་ལ་བརྟེན་ནས་བརྗ་དོན་གསལ་ བར་སྟོན་མི་གོ	
	ང རང་སྟོབས་ཀྱི་སྐོ་ནས་ ནས་བརྗ་དོན་གསལ་ བར་སྟོན་མི་གོ།	
༧	འོག་གི་སྟོན་འཛུག་ཚུ་ལས་ མིང་གཞི་ལུ་མང་སུ་སྐེ་འཛུག་མི་ སྟོན་འཛུག་འདི་	
	ཀ ག་ཨིན།	
	ཁ ད་ཨིན།	
	ག བ་ཨིན།	
	ང མ་ཨིན།	
༡༠	ཡང་འཛུག་ས་འདི་ ཐུ་ཚིག་གི་ལུ་	
	ཀ ཚར་བའི་དོན་སྟོན་ནི་དོན་ལུ་སྦྱར་དགོ།	
	ཁ འབད་ནིའི་ དོན་སྟོན་ནི་དོན་ལུ་སྦྱར་དགོ།	
	ག འབད་བཞིན་པའི་དོན་སྟོན་ནི་དོན་ལུ་སྦྱར་དགོ།	
	ང རང་བཞིན་ཐྱེས་གྲུབ་པའི་ དོན་སྟོན་ནི་དོན་ལུ་སྦྱར་དགོ།	

སྡེ་ཚན་ཁ་པ།སྒྲུགས་༢༠།	
བཀོད་རྒྱ། ངོག་གི་དྲི་བ་ཚུ་གི་ལན་ རེས་པར་དུ་བྱེས།	
༡ ཆུན་སྦུད་ལུ་སྤྱིར་གྱི་ནང་གསེས་ཀྱི་དབྱེ་བ་གཅིག་ཡོད་གཅིས།(**དྲན་ཨེས**)	[༡]
༢ ཆུན་སྦུད་ལུ་སྤྱིར་གྱི་ནང་གསེས་ཀྱི་དབྱེ་བ་གཅིག་ཡོད་གཅིས།(**དྲན་ཨེས**)	[༡]
༣ བདག་སྐྱ་ཟེར་མི་འདི་ཚྭད་ཀྱིས་ག་དེ་སྦེ་ཏ་ཐོ་ཡི་ག་དོན་དག་ཅིག་བྱེས།(**ཐོ་རྟེགས**)	[༡]
༤ སྡོན་འཛུགཔ་ག་གིས་འཛུག་པའི་དེབེར་བརྩོད་གཞིས་ཀྱུབ།(**ལག་ལེན**)	[༡]
༥ ལྷག་བཅས་ཀྱི་ཐུང་**ཀེ་དེ**་གཞིས་བཙུགས་ཏེ་དེབེར་བརྩོད་རེ་རེ་ཀྱུབ།(**ལག་ལེན**)	[༡]
༦ ཚོག་ཐུང་རདར་དབང་ཅན་བཤད་པའི་སྐབས་ལུ་དང་སྐྱ་འབྱེད་པ་ལུ་འཛུག་པའི་དེབེར་བརྩོད་གཞིས་བྱེས།(**ལག་ལེན**)	[༡]
༧ འབྱེད་སྦུད་ཟེར་བའི་སྐབས་ལུ་ཚོག་འབྱེད་པ་དང་སྦུད་པ་གཞིས་ཀྱི་ཁྲད་པར་བྱེས།(**དབྱེ་དཔྱད**)	[༡]
༨ དམ་བཅའ་བའི་སྐབས་ དམ་བཅའ་ཐུལ་སའི་ཡུལ་དང་དམ་བཅའ་ཐུལ་མིའི་མཚན་བྱེས།(**དྲན་ཨེས**)	[༡]
༩ དབྱངས་དང་གསལ་ཁྱེད་གཞིས་ཀྱི་ཁྲད་པར་བྱེས།(**དབྱེ་དཔྱད**) (**ཐོ་རྟེགས**)	[༡]
༡༠ འཁེལ་སྤྲའི་འཛུག་ཡུལ་ལས་ དོ་ཝོ་བདག་གཅིག་ཟེར་བའི་ཐོ་དོན་འགྲེལ།	[༡]
སྡེ་ཚན་གཉ་ སྒྲུགས་༣༠།	
བཀོད་རྒྱ། ངོག་གི་དྲི་བ་བར་ཆཱུད་ལས་བདུན་གདམ་ཁ་ཀྱུབ་སྡེ་ལན་བྱེས།	
དྲི་བ་དང་པ།	[༤]
ཀ) ཆུན་སྦུད་ཀྱི་ངེས་ཚིག་བྱི་ཞེན་ལས་དེབེར་བརྩོད་ཀྱི་ནང་གསེས་ག་དེ་ཅིག་ཡོད་གཅིས།(**དྲན་ཨེས**)	
ཁ) བསྡུས་སྡོམ་འདི་སྦུང་བཙོན་འབད་བའི་སྐབས་དང་པ་ར་དབྱངས་དང་གསལ་གཞིས་ཀྱི་སྐོར་ལས་ལྷག་མི་འདི་གིས་ ཁྱོད་ལུ་ཡོན་ཏན་ག་ཅི་ར་ཐོབ་ཅི? ཁྱོད་རའི་བསམ་འཆར་བྱེས།(**གསར་རྩོམ**)	[༤]
དྲི་བ་གཉིས་པ།	
ཀ) བསྡན་བཅོས་འདི་ནང་དམ་བཅའ་མཛད་དགོ་པའི་དོན་དག་ཁ་གསལ་སྦེ་བྱེས།(**ཐོ་རྟེགས**)	[༤]
ཁ) རྩོང་ཁའི་ཡི་གུ་བྱི་ནི་ལུ་མིང་བདག་སྐྱ་པ་ཡོ་ཚུ་ལྷག་མི་འདི་གིས་ཤན་ཐོགས་འདུག་ག? ག་ཅི་འབད? (**དབྱེ་ཞིབ**)	[༤]
དྲི་བ་གསུམ་པ།	[༤]
ཀ) ནི་སྐྱ་ལུ་དེབེར་བརྩོད་ནང་གསེས་ག་དེ་ཅིག་ཡོད་ག? དེ་ཚུ་གི་དེབེར་བརྩོད་རེ་རེ་བྱེས།(**ལག་ལེན**)	
ཁ) སྐར་བསྡུ་དང་ལ་དོན་གཞིས་ལུ་ཁྲད་པར་ག་ཅི་ར་ཡོད་ག་བྱེས།(**དབྱེ་དཔྱད**)	[༤]
དྲི་བ་བཞི་པ།	[༤]

ཀ གསལ་བྱེད་སྒམ་རྩ་ཡོའི་ཡི་གེ་རེར་དབྱངས་ཡིག་བཞི་པོ་སྦྱར་ཏེ་བྱིས།(**ལག་ལེན**)	
ཁ དཔེར་ན་ ཡི་གེ་ གা་ལུ་ མིང་གཞི། རྟེས་འཇུག སྔོན་འཇུག་གི་ཐ་སྙད་བཞག་མི་འདི་ འོས་འབབ་འདུག་གམ ? གা་ཅི་སྨྲི། **དབྱེ་ཞིབ**)	[ཁ]
དྲི་བ་ལྔ་པ། ག སྔོན་བ་གེས་མིང་ག་གা་གཉིས་ལུ་བཅེགས་འདོགས་འབབ་འཇུག་པའི་དུས་ལྟ་རེ་བྱིས།(**ལག་ལེན**)	[ཁ]
ཁ རྟེས་འཇུག་དང་ཡང་འཇུག་གཉིས་ཀྱི་ཁྱད་པར་བྱིས།(**དབྱེ་དཔྱད**)	[ཁ]
དྲི་བ་དྲུག་པ། ག འཕེལ་སྒྲའི་འཇུག་ཡུལ་ལས་ དེ་ལས་དེ་འབྱུང་གི་འཕེལ་པ་ཟེར་བའི་གོ་དོན་དང་ཚིག་ནང་བྱིས།(**གོ་རྟོགས**)	[ཁ]
ཁ ལྷག་བཅས་དང་སྒྲ་བསྡུའི་ཁྱད་ཚར་ཕྱེ་སྟེ་བྱིས།(**དབྱེ་དཔྱད**)	[ཁ]
དྲི་བ་བདུན་པ། ག རྒྱན་སྤྲད་ལས་མཐུན་པ་དང་མི་མཐུན་པའི་རྒྱན་གྱི་དཔེ་སྒོ་བ་གྲུ་ལུ་བཞག་སྟེ་ལྟ་རེ་བྱིས།(**ལག་ལེན**)	[ཁ]
ཁ བསྟན་བཅོས་འདི་ལས་བཤད་པའི་དང་སྒྲ་འདི་ རྩོང་ཁར་ལག་ལེན་འཐབ་པའི་ཐུ་སྤྱབས་བའེ་མབའེ་གི་སྐོར་ལས་བྱིས།(**དབྱེ་དཔྱད**)	[ཁ]
དྲི་བ་བརྒྱད་པ། ག དེ་སྒྲ་བཤད་པའི་སྐབས་ཀྱི་རྣམ་གྲངས་གཞན་སྒྱོར་ཞེས་པའི་གོ་དོན་འགྲེལ་ཏེ་བྱིས།(**གོ་རྟོགས**)	[ཁ]
ཁ དགག་སྒྲ་མ་མི་གཉིས་དང་ མིན་མེད་ཀྱི་ཁྱད་པར་ཁ་གསལ་སྒེ་བྱིས།(**དབྱེ་དཔྱད**)	[ཁ]

༡ སུམ་རྟགས་བསྡུས་བསྟོམས་ཀྱི་དྲི་བཀོད་འཆར་གཞིའི་རེའུ་མིག། སྤེ་ཚན་ཀ་དང་ཁ། ༢༠༢༡

རིགཔ་རྩལ། / ལས་དོན།	སྐྱེས་བཞོ་བཤའ།		དབྱེ་ཤེས།	གོ་རྟོགས	ལག་ལེན།	དབྱེ་དཔྱད།	བསྟོམས།	
	བརྒྱ་ཚ་༡༠༠	བརྒྱ་ཚ་༣༠					སྐྱེས་	དྲྭ་བ།
དམ་བཅའ་དང་ དབྱངས་གསལ། མིང་གཞི་སུམ་ཅུ་པའི་རྣམ་གཞག་ཚུ་བྱེ་སྤྲད་འབད་ཚུགས་དགོ།	༢༠	༤	༡ལན་ཐུང་།	༡ གདམ་ཁ།		༣གདམ་ཁ། ༢ ལན་ཐུང་།	༤	༩
སྤྱོན་འཇུག་དང་རྗེས་འཇུག་ཡང་འཇུག་གསུམ་ཀྱི་ཐ་སྙད་རྣམ་གཞག་ཚུ་བྱེ་སྤྲད་འབད་ཚུགས་དགོ།	༢༠	༤	༢ གདམ་ཁ།	༡ ལན་ཐུང་།	༡༠ གདམ་ཁ། ༩ ལན་ཐུང་།		༤	༩
རྗེས་འཇུག་ལུ་ལྷོས་པའི་ ཕྲད་རྣམ་དབྱེ་དང་ བཅས་པའི་ གོ་བ་ཤེས་ཏེ་ དོན་ཀྱི་འཇུག་ཚུལ་ ཀྱི་ བསམ་ཞིབ་འབད་དེ་བཀྲི་ཚུགས་དགོ།	༣༠	༨	༡ གདམ་ཁ། ༡ ལན་ཐུང་།	༡ གདམ་ཁ། ༡༠ ལན་ཐུང་།	༣ གདམ་ཁ། ༥ ལན་ཐུང་།		༨	༤
ཕྲད་རང་དབང་ཅན་དང་ བདག་སྤྲ་དགག་སྤྲ་ཚུ་དོས་འཛིན་ཏེ་ དོན་ཀྱི་ དབྱེ་བ་ཚུ་གི་ ས་ཁྱོན་ལས་ཁྱེ་སྤྲད་འབད་ཚུགས་དགོ།	༣༠	༨		༤ གདམ་ཁ། ༣ ལན་ཐུང་།	༥ གདམ་ཁ། ༤ ལན་ཐུང་།	༤ གདམ་ཁ། ༧ ལན་ཐུང་།	༨	༤
བསྟོམས།	༡༠༠	༣༠	༤	༨	༨	༤	༣༠	༣༠

སུམ་རྟགས་བསྡུས་བསྡོམས་ཀྱི་དྲི་བཀོད་འཆར་གཞི་རེའུ་མིག། སྤེ་ཚན་གཅིག། ༢༠༢༡

རིགས་རྩལ། / ལས་དོན།	སྐྱགས་བཟོ་བཤད།		དན་ཤེས།	གོ་རྟོགས།	ལག་ལེན།	དཔྱད་དཔྱད།	དཔྱད་ཞིབ།	གསར་རྩོམ།	བསྡོམས།	
	བརྒྱ་ཚ ༡༠༠	བརྒྱ་ཚ ༤༠							སྐྱགས།	དྲི་བ།
དམ་བཅའ་དང་ དབྱངས་གསལ། མིང་གཞི་སྐྱམ་ཆུ་ཟའི་རྣམ་གཞག་ཚུ་བྱི་སྤྲད་འབད་ཚུགས་དགོ།	༡༠	༡༥		༢གག།	༤གག།			༡ཁྱ།	༡༥	༣
སྟོན་འཛུག་དང་རྩེས་འཛུག་ཡང་འཛུག་གསུམ་གྱི་ཐ་སྙད་རྣམ་གཞག་ཚུ་བྱི་སྤྲད་འབད་ཚུགས་དགོ།	༡༠	༡༥			༤གག།	༤ཁྱ།	༤ཁྱ།		༡༥	༣
རྩེས་འཛུག་ལུ་ལྟོས་ཡའི་ ཕྲད་རྣམ་དཔྱེ་དང་བཅས་ཡའི་ གོ་བ་ཤེས་ཏེ་ དོན་ཚིག་འཛུག་ཚུལ་གྱི་ བསམ་ཞིབ་འབད་དེ་བ་ི ཚུགས་དགོ།	༡༠	༡༥	༡གག།	༥གག།	༧གག།	༥ཁྱ།	༣ཁྱ།		༡༥	༥
ཕྲད་རང་དབང་ཅན་དང་ བདག་སྤྲ་དགག་སྤྲ་ཚུ་ དོས་འཛིན་ཏེ་ དོན་ཚིག་ དཔྱེ་བ་ཚུ་གི་ སྡ་ོད་ལས་བྱི་སྤྲད་འབད་ཚུགས་དགོ།	༡༠	༡༥		༢གག།	༣གག།	༧-༢ཁྱ།	༢ཁྱ།		༡༥	༥

བསྟོམས།	๗๐๐	๔๐	๕	๗๕	๓๐	๓๐	๗๕	๕	๔๐	๗๘

སློབ་རིམ་༡༠ པ།

ཆོས་ཚན། སྐད་ཡིག ། ཡྱོགས་སྡུབ་གཞི་བཞག་གི་དྲི་བ།

སྐུགས། ༡༠༠ །

སྡེ་ཚན་ཀ་པ།སྐུགས་༡༠།	
བཀོད་རྒྱ། འོག་གི་དྲི་བ་རེ་ལྟ་ལན་ཀ་ཁ་གུ་ང་བཞི་རེ་ཡོད་སྟ་ལས་ལན་ངོམ་འདི་གདམ་ཁ་རྒྱབ་སྡེ་ཀ་རྟགས་གྱ་སྒོར་ཐིག་O དེ་བཟུམ་བཀལ།	[༡༠]
༡. གཟུགས་ཅན་གྱི་རྒྱན་གྱི་མིང་གི་རྣམ་གྲངས་གཞན་ ཀ ངོ་བོ་ཙམ་སྟོན་པའི་རྒྱན་ཞེན། ཁ ཡན་ལག་གི་རྒྱན་ཞེན། ག ཚུལ་ཅན་གྱི་རྒྱན་ཞེན། ང ལུས་ཀྱི་རྒྱན་ཞེན།	
༢. དོན་རྒྱན་ཚུལ་ལས་༤པ་ནི་ ཀ གཟུགས་ཅན་གྱི་རྒྱན་ཡིན། ཁ སྒོར་བའི་རྒྱན་ཡིན། ག དབེ་ཡི་རྒྱན་ཡིན། ང འགོག་རྒྱན་ཡིན།	
༣. སྡེབ་སྦྱོར་ཤེས་ན་ཆོགས་བཅད་ལ་མི་རྟོངས། ཞེས་པའི་སྐབས་ཀྱི་ སྡེབ་སྦྱོར་ནི་ ཀ ཆོགས་བཅད་སྒྲིག་སྟངས་ཀྱི་ཁྱིམས་ཤིག་ལ་གོ་དགོས། ཁ ཕྱད་དང་རྣམ་དབྱེ་སྦྱོར་སྟངས་ཤིག་ལ་གོ་དགོས། ག ཡི་གུའི་དག་ཚ་ཚུ་ལུ་གོ་དགོས། ང ཡི་གུའི་སྡེབ་ལ་གོ་དགོས།	
༤. གཞན་དང་ཙྪེད་ནས་འཛོམས་པའི།། ཞེས་པའི་སྐབས་ **ཙྪེད་** ཞེས་པའི་དོན་ནི་ ཀ ཁ་གདངས་པ་ལ་གོ།། ཁ མིག་འབྱེད་པ་ལ་གོ།། ག ལས་བྱེད་པ་ལ་གོ།། ང འོ་བྱེད་པ་ལ་གོ།།	
༥. ཁྱོད་ར་སྤོབ་གྲ་ནང་ཕྱི་རྒྱའི་ར་ནང་སྦྱོང་གི་སྐབས་སུ་གཉིད་སྤུག་རྒྱབ་སྡེ་དེ་ཚ་ལྟ་དགོ་ཨ་མནོ་བར་སྟོད་པ་དགྲོ་བྱར་དུ་གྲོག་མེ་ཡང་ཤེ་སོ་ཡི།གནས་སྟངས་འདི་སྟན་དགུ་ལྟར་ན་	
ཀ རང་བཞིན་བརྗོད་པའི་རྒྱན་ཞེན།	

	ཁ ཕུལ་བྱུང་གི་རྒྱུན་ཙམ། ག ཀུན་ཁག་གི་རྒྱུན་ཙམ། ང རྒྱ་ཆེ་བའི་རྒྱུན་ཙམ།	
༦.	རི་བོ་བཞིན་དུ་མཛེས་སྐུ་བརྟན།། ཁུ་བྱུག་.....བཞིན་གསུང་དབྱངས་སྙན།། གོང་གི་ས་སྟོང་ནང་ལུ་ འོས་འབབ་ཡོད་པའི་ མིང་འདི་ ཀ གཟུགས། ཁ སྐུ། ག དེ། ང རོ།	
༧.	ཚོད་དང་ ཚོད་རའི་ཆ་རོགས་ཚུ་ ཁོམ་ཁར་འགྱོ་ནི་འདད་ ཕྱི་ཁར་འཐོན་མ་ཅིག་ར་)ཆར་པ་ཤུགས་འབད་རྒྱབ་ཅི་གོང་(གི་གནས་སྟངས་འདི་ལུ་རབ་རྟོག་གསལ་ཏེད་ཀྱི་སྐབ་ **འཇ་** ཟེར་མི་བཙུགས་ཏེ་སེམས་མེད་རབ་རྟོག་གི་དཔེར་བརྗོད་རྒྱབ་པ་ ཅིན་ ཀ འཁྲལ་བའི་མིག་ལས་འཐོན་ཏེ་ཚུ།། དཀྱར་དུས་གྲུ་ཆར་འབབ་པ་བཞིན།། ཁ དགོས་མེད་དུས་སུ་ཆར་འབབ་པ།།ཁྱོ་འགྲངས་དུས་སུ་ཟས་སྦྱིན་འདུ།། ག འགྲོ་ལམ་ཐལ་མེད་ཅེད་པའི་ཕྱིར།། ཆར་པས་གོ་ནས་འོངས་བ་འདུ།། ང དུས་ཀུན་འབབ་པའི་ཆར་ཚུ་འདི།། ལྷ་དང་ལྷ་མོའི་མིག་ཚུ་བཞིན།	
༨.	འོག་གི་ ཐུང་བ་འགོག་པའི་རྒྱུན་གྱི་ དཔེར་བརྗོད་ཀྱི་འཕྲོ་མཐུད་ནི་ མཐུ་ཆེན་བློ་མའི་ཞབས་སོར་བགོད་ཅམ་གྱིས། །ཁ་བཞི་ལྟོངས་འདི་ཆོས་ཀྱི་ཞིང་ས་སྟེ། । ཐུང་ཅེས་སྟོན་ཐུང་ལོ་རྒྱས་བདེན་པར་དཀའ། ।.....। । ཀ འོན་ཀྱང་རྒྱལ་བའི་འཕྲིན་ལས་རྣད་པོ་ཆེ། । ཁ རྣབར་ཐོས་པའི་སྐལ་བ་དེ་བཞིན་པར་འགྱུར། । ག གཏུང་བའི་དཏུལ་ཚུའི་ཐིག་པ་ཅི་ཕྱིར་འཛ་ག । ང མཆོག་གསུམ་སྐུབས་སུ་ཤེས་འདིས་མི་ཆོག་གམ། ।	
༩.	རང་བཞིན་བརྗོད་པའི་རྒྱུན་དང་ དཔེ་རྒྱུན་གཉིས་ལུ་ ཀ དཔེ་དམན་ལྷག་གི་ཁྱད་པར་ཡོད། ཁ བཞིན་སྐྱ་ཡོད་ཤེད་ཀྱི་ཁྱད་པར་ཡོད། ག དུག་སྐྱ་བསྡུས་པ་དང་མ་བསྡུས་པའི་ཁྱད་པར་ཡོད། ང དཔེ་དང་དཔེ་ཅན་འབད་བགོད་དེ་ཡོད་ཤེད་ཀྱི་ཁྱད་པར་ཡོད།	
༡༠.	ཟུང་ལྡན་བར་ཆོད་པ་དང་མ་ཆོད་པའི་ཁྱད་པར་ནི་ ཀ ཡི་གེ་ཐོག་མར་ཡོད་པ་དང་ཤེད་པའི་ཁྱད་པར་ཡོད། ཁ ཟུང་ལྡན་བར་དང་མཐའ་མར་ཡོད་པའི་ཁྱད་པར་ཡོད། ག ཡི་གེ་གཞན་བར་དུ་ཡོད་པ་དང་ཤེད་པའི་ཁྱད་པར་ཡོད།	

ང ཟླ་ལྷན་ཐོག་མ་དང་མཐའ་མར་ཡོད་པའི་ཁྱད་པར་ཡོད།	
སྡེ་ཚན་ཁ་པ།སྐྱགས་༢༠།	
བཀོད་རྒྱ། འོག་གི་དྲི་བ་ཚུ་གི་ལན་ རེས་པར་དུ་བྱེས།	
༡. ཆོག་འཐུ་ཆ་དང་ཡ་གཏེས་ལས་ ཆ་ཡི་དུས་ཤེ་ བཀོད།	[༢]
༢. མཚུངས་གསལ་གྱི་སྐྱ་ གང་ཟུང་ཤེ་ བྱེས།	[༢]
༣. སྟན་དགེ་མཛེས་པར་བྱེད་པ་ཡི། །ཆོས་རྣམས་ཀུན་ཞེས་རབ་ཏུ་བརྗོད།། ཅེས་པའི་འགྲེལ་པ་བྱེས།	[༢]
ཤ. འོག་གི་ ཆོགས་བཅད་འདི་ལྷག་སྟེ་ སྐོས་པ། ཀ་དམྱལ་དུངས་པ། ཡིད་ནི་འཕྲོག། ཚུ་གི་གོ་དོན་བྱེས།	[༢]
༥. ཉམས་ལྡན་གྱི་ཀུན་ཟེར་མི་འདི་ གཅི་བཟུམ་ཅིག་ལུ་སྐྱབ་སྟོ?	[༢]
༦. ཁྱོད་ཀྱིས་ ཕུལ་འབྱུང་གི་ཀུན་འདི་སྦྱངས་ཞེན་ལས་ གཅི་འབད་བའི་སྐབས་ལུ་ར་ ལག་ལེན་འཐབ་ནི་སྟོགས་དོ་ ? ༢ བྱེས།	[༢]
༧. འོག་གི་ཐིག་ཁྲམ་ནང་གི་ མིང་ཆོག་རྣམས་ལག་ལེན་འཐབ་སྟེ་ས་སྟོང་ཚུ་སུབས།	[༢]
༨. ཡང་ཡང་དང་ ལྷང་ལྷང་གཏེས་བཙུགས་ཏེ་ ཟླ་ལྷན་གྱི་དེམེར་བརྗེད་ཆོག་ཀང་གཏེས་བྱེས།	[༢]
ཀ. བསྟུས་པའི་གཟུགས་ཅན་དང་ མ་བསྟུས་པའི་གཟུགས་ཅན་གཏེས་ཀྱི་ ཁྱད་པར་བྱེས།	[༢]
༡༠. ཆོག་ལྷུག་པ་དང་ ཆོགས་བཅད་གཏེས་ཀྱི་ ཁྱད་པར་བྱེས།	[༢]
སྡེ་ཚན་གཉ་ སྐྱགས་༣༠།	
བཀོད་རྒྱ། འོག་གི་དྲི་བ་བར་ཆུ་ཐུང་ལས་བདུན་གདན་ཁ་རྒྱབ་སྟེ་ལན་བྱེས།	
དྲི་བ་དང་པ། ཀ(ཉམས་ལྡན་གྱི་ཀུན་ བརྒྱད་ཡོད་མི་ནང་ལས་གང་ཟུང་ཤ་ གི་མིང་བྱེས།	[ཤ]
ཁ(རྟང་པ་བཞེ་ཀའི་བར་ལ་ཡོད་པའི་ཟུང་ལྡན་གྱི་རྩེམ་ ཆོགས་བཅད་ཀ་ བྱེས།	[ཤ]
དྲི་བ་གཉིས་པ། ཀ(རང་བཞིན་བརྗོད་པའི་ཀུན་གྱི་ མཚན་ཉིད་བྱེས།	[ཤ]
ཁ(དེས་ཅན་དང་གཟུགས་ཅན་གཉིས་ལས་ རྩོམ་རྒྱབ་པའི་སྐབས་ཁྱོད་ལུ་ག་འདི་ སྟབས་བདེ་བས་གོ ?གཅི་འབད?	[ཤ]
དྲི་བ་གསུམ་པ། ཀ(འོག་གི་ རྩ་ཆོག་གི་ འགྲེལ་པ་བྱེས།	[ཤ]
ཁ(བསྟུས་པའི་གཟུགས་ཅན་དང་ མ་བསྟུས་པའི་གཟུགས་ཅན་གཉིས་ཡོད་བཞིན་དུ་ དུ་རུང་བསྟུས་ཤིང་མ་བསྟུས་པའི་	[ཤ]

གཟུགས་ཅན་ ཟེར་དཔེར་བརྗོད་དབྱེ་བ་སོ་སོ་སྦྱེ་ཡོད་མི་འདི་ དགོས་འདུག་གཏ?ག་ཅི་འབད ?	
དྲི་བ་བཞི་པ། ཀ(འོག་གི་སྡེ་ཚན་ཀ་གི་སྐྱོན་སེལ་གྱི་དཔེར་བརྗོད་དང་ཁ་གི་མིང་གཉིས་མཐུན་སྒྲིག་འབད།	[༤]

)ཀ་དཔེར་བརྗོད་(	)ཁ་མིང་(
༡. དལ་འོ་བཏབ་པའི་འོ་ཏོག་ལེགས།། ཉ་མོ་རྣམས་ནི་མཆོ་ལ་གནས།།	ཀ(དུས་འགལ་བའི་སྐྱོན།
༢. སྡིད་པའི་མིག་གཅིག་རྟ་བདུན་བདག ཉིན་བྱེད་དབང་པོ་མཁར་འཕོས་པས།།	ཁ(དོན་འགལ་བའི་སྐྱོན།
༣. དག་བོ་རྒྱ་བཟུང་མི་འོས་པ།། དག་བོ་ལ་བཟུང་ཁོང་ཁྲོ་བ།།	ག(དོན་གཅིག་པའི་སྐྱོན།
༤. དགྱན་དུས་ཡངས་པའི་སྤང་སྡོངས་ཀྱི།། མེ་ཏོག་རྒྱ་སྐར་ལྟར་བཀྲ་བ།།	ང(སྤེལ་སྦྱོར་ཉམས་པའི་སྐྱོན།
༥. དག་རིགས་མཐའ་དག་འཛོམས་པ་དང་	ཅ(གཅོད་མཚམས་ཉམས་པའི་སྐྱོན།
༦. འབྲུང་པོ་ཀུན་ལ་བཅུ་བ་ཅན།།	ཆ(དོན་ཉམས་པའི་སྐྱོན།

ཁ(འོག་གི་ཚིག་ཤད་གི་ས་སྟོང་ནང་ འོས་འབབ་ཡོད་པའི་ཚིག་འཛོ་མཐུད་དེ་ཚིག་འབྲུ་དགུ་མའི་ནང་བཟོ་སྟེ་བྱིས།(༥) ཀ)ཡིད་འཕྲོག་ལྟ་མོའི་སྐུ་ཡི་.....༡.....།། ཁ)པད་ལྟའི་འདབ་མ.....༢.....།། ག)ལྟང་ལྟང.....༣.....།། ང)མཚོ་བྱང་ལྟ་མོའི.....༤.....།།	[༥]
དྲི་བ་ལྔ་པ། ཀ(མཚུངས་གསལ་གྱི་སྒྲ་གང་རུང་གཉིས་བཙུགས་ཏེ་ དཔེར་བརྗོད་གཅིག་རྩོམ།	[༤]
ཁ(འགོག་རྒྱན་དང་སྡིད་པ་ཅན་གྱི་རྒྱན་གཉིས་ཀྱི་ཁྱད་པར་བྱེས།	[༤]
དྲི་བ་དྲུག་པ། ཀ(འོག་གི་དཔེའི་གཟུགས་ཅན་གྱི་ རྟ་ཚོག་འདི་ལྟ་ཞེན་ན་ རྒྱན་འདིའི་དཔེར་བརྗོད་གཅིག་རྩོམས།	[༤]
ཁ(གཟུགས་ཅན་གྱི་རྒྱན་གྱི་སྐབས་སུ་ མཚུངས་གསལ་གྱི་སྒྲ་ཚུ་ལག་ལེན་འཐབ་མ་དགོ་པའི་ ཁྱད་པར་གཅིག་ཅི་ཞིན་ན?	[༤]

དྲི་བ་བདུན་པ། ཀ(འོག་གི་གཟུང་ལྡན་གྱི་ཚོག་ཚུ་ཡག་ལེན་འཐབ་སྟེ་ ཤད་པ་བཞི་ཀའི་ཐོག་མར་ཡོད་པའི་ དཔེར་བརྗོད་གཅིག་བྱེས།	[༤]
ཁ(ཕུལ་འབྱུང་གི་རྒྱུན་ ཞེས་བརྗོད་དགོ་པའི་རྒྱུ་མཚན་གཅིག་སྨོས?	[༤]
དྲི་བ་བརྒྱད་པ། ཀ རང་གིས་དཀའ་བའི་མི་ལུ་ 'སེམས་ལྡན་རབ་རྟོག་གི་རྒྱན་གྱི་ཐོག་ལས་བསྟོད་པའི་དཔེར་བརྗོད་ཚོགས་བཅད་གཅིག་བྱེས།	[༤]
ཁ གཅིག་སྟེ། ?ཀུན་ཟན་གྱི་རྒྱན་གྱི་ཐོག་ལས་གནད་དོན་ཚུ་ཟཕད་པ་ཅིན་ རང་གི་བསམ་དོན་བསྒྲུབ་ནི་ལུ་ཁེ་ཟན་འདུག་ག	[༤]

རིག་རྩལ། / ལས་དོན།	སྐྱེས་བཞོ་བཤགས།		དབྱེ་ཤེས།	གོ་རྟོགས	ལག་ལེན།	དབྱེ་དཔྱད།	བསྟོམས།	
	བརྒྱ་ཚ་১০০	བརྒྱ་ཚ་২০					སྐྱེས་	དྲི་བ།
སྒེན་དགེ་རྩོམ་པ་པོའི་ལོ་རྒྱུས་ བརྩམས་དགོས་པའི་ཁྲུངས་དོན་དང་རྒྱུ་མཚན་ དེ་ལས་ལུས་རྒྱན་སྐྱོན་སེལ ཀྱི་གོ་དོན་དབྱེ་བ་ཟིལ་གྱིས་འབད་ཚུགས་དགོ།	১০	২	১ ལན་ཐུང་།	২ གདམ་ཁ།			২	২
མཚུངས་གསལ་ཀྱི་སྒྲ་ཚུ་ ལག་ལེན་འཐབ་སྟེ་ དཔེར་བརྗོད་ཚུ་ བཅད་ལྷག་སྟེལ་མ་གསུམ་ཀྱི་སྐོར་ལས་ཟིལ་གྱིས་འབད་ཚུགས་དགོ།	১০	২	২ ལན་ཐུང་།			১০ གདམ་ཁ།	২	২
རང་དཔེ་གཟུགས་གསུམ་ཀྱི་གོ་དོན་ དབྱེ་བ་ དཔེར་བརྗོད་ཚུ་ སྐབས་དོན་དང་འཁྲིལ་ཏེ་གསར་རྩོམ་འབད་ཚུགས་དགོ།	২০	৮	১ གདམ་ཁ།	২ ལན་ཐུང་།	৬གདམ་ཁ། ৯ ལན་ཐུང་།	৮ གདམ་ཁ། ৮ ལན་ཐུང་།	৮	৬
འགོག་ཆྱུན་དང་ སྡིད་པ་ཅན་ཀྱི་ཆུན་ བསྡུས་བརྗོད་ཀྱི་ཆུན་ གསུམ་ཀྱི་ནང་དོན་ཚུ་དཔྱད་པ་འབད་དེ་ ཆུན་དང་མཐུན་པའི་ དཔེར་བརྗོད་ཟིལ་སྒྲ་འབད་ཚུགས་དགོ།	১৫	৫	২ གདམ་ཁ།	৯ ལན་ཐུང་། ৯ གདམ་ཁ།	২ གདམ་ཁ།		৫	৯
ཕྱལ་ཐུང་ རབ་རྟོག་ ཁྲུའི་ཆུན་གསུམ་ཀྱི་སྤྱི་དོན་དང་ རྟ་འགྲེལ་ཚུ་གི་གོ་དོན་ལེན་ཏེ་ ཆུན་དང་མཐུན་པའི་དཔེར་བརྗོད་ཚུ་ཟིལ་སྒྲ་འབད་ཚུགས་དགོ།	১০	২			৯ གདམ་ཁ། ৬ ལན་ཐུང་།		২	২

ཐུ་མོ་ རྣམ་གྲངས་བརྩོད་པ་ ཉམས་ལྡན་རྒྱུན་ཚུ་གི་གོ་དོན་དང་ རྒ་འགྲེལ་ཚུ་གི་གོ་དོན་ལེན་ཏེ་ རྒྱུན་དང་མཐུན་པའི་དཔེ་བརྩོད་ ཚུ་ཟིལ་སྤྲད་འབད་ཚུགས་དགོ།	༡༠	༣		༤ གདམ་ཁ།		༡༠ ལན་ཐུང་།	༣	༢
ཀུན་ཁན་དང་ཟུང་ལྡན་རྒྱན་གྱི་ རྒ་འགྲེལ་ཚུ་གི་གོ་དོན་ལེན་ཏེ་ རྒྱུན་དང་མཐུན་པའི་དཔེ་བརྩོད་ཚུ་ཟིལ་སྤྲད་འབད་ཚུགས་དགོ།།	༡༤	༩		༤ ལན་ཐུང་།	༢ ལན་ཐུང་།		༩	༢
བསྡོམས།	༡༠༠	༣༠	༤	༨	༨	༤	༣༠	༢༠

སྒེན་དགེ་གི་དྲི་བཀོད་འཆར་གཞི་རེའུ་མིག། སྤེ་ཚན་གཅིག། ༢༠༢༡

ཅིག་རྩལ། / ལས་དོན།	སྒྲུགས་བསྐོ་བཀའ།		དབང་ཤེས།	གོ་རྟོགས།	ལག་ལེན།	དཔྱད་དཔྱད།	དཔྱད་ཞིབ།	གསར་རྩོམ།	བསྡོམས།	
	བརྒྱ་ཚ ༡༠༠	བརྒྱ་ཚ ༤༠							སྒྲུགས།	དྲི་བ།
སྒེན་དགེ་རྩོམ་པ་ཡོའི་ལོ་རྒྱུས་ བཅུམས་དགོས་པའི་ཁྲངས་ དོན་དང་རྒྱུ་མཚན་ དེ་ལས་ལྷག་རྒྱན་སྐྱོན་སེལ ཀྱི་གོ་དོན་ དཔྱད་པ་ཟིལ་སྤྲད་འབད་ཚུགས་དགོ།	༡༠	༥		༩ཀ།					༥	༡
མཚུངས་གསལ་ཀྱི་སྒྲ་ཚུ་ ལག་ལེན་འཐབ་སྟེ་ དཔེར་བརྗོད་ ཚུ་ བཅད་ཡྱུག་སྟེལ་མ་གསུམ་ཀྱི་སྐོ་ལས་ཟིལ་སྤྲད་འབད་ ཚུགས་དགོ།	༡༠	༡༠			༥ཀ།	༤ཁ།			༡༠	༡

རང་དུས་གཟུགས་གསུམ་གྱི་གོ་དོན་ དབྱེ་བ་ དེའི་བཤད་ཚུལ་ལྟ་གསར་རྩོམ་འབད་ཚུགས་དགོ།	༣༠	༢༥		༢ག།	༤ག།	༩ཁ།	༢ཁ། ༣ཁ།		༢༥	༥
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ཕུལ་བྱུང་ རབ་རྟོག་ རྒྱུའི་རྒྱན་གསུམ་གྱི་སྤྱི་དོན་དང་ ཟ་ འཚེལ་ཚུ་གི་གོ་དོན་ལེན་ཏེ་ རྒྱན་དང་མཐུན་པའི་དེའི་བརྩོད་ ཚུ་བྱེ་སྤྱབ་འབད་ཚུགས་དགོ།	༡༠	༡༠			༢ག།	༧ཁ།			༡༠	༢
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བསྡོམས།	**༡༠༠**	**༢༠**	**༥**	**༡༥**	**༣༠**	**༣༠**	**༡༥**	**༥**	**༢༠**	**༡༨**

ENGLISH

Answer ALL Questions
Writing and Language (Paper – I)
Examination Time: Three Hours Fifteen Minutes.
(The first fifteen minutes is for reading the Question Paper)

SECTION A (60 MARKS)
Answer ALL Questions

1. **Write an expository essay of about 350 – 400 words on any ONE of the topics given below. Marks will be awarded for orderly and coherent presentation of materials, use of appropriate features and accuracy of spellings, punctuation and grammar.** **[25]**

   i. Discuss the importance of having pride in one's work.
   ii. Friends are very important for everyone in school. Explain **THREE** qualities that are very essential for someone to be a good friend.

2. **Write a letter on any ONE of the following situations given below.** **[15]**
   You are Yeshi, a class X student of Gakiling Central School, Punakha. Write a letter on any **ONE** of the following scenarios:

i. Read the announcement given in the 'Kuensel' to apply for the mentioned job. Write an application to the Manager, providing all the necessary information on why you want the particular job.

VACANCY ANNOUNCEMENT
YARGEY ENTERPRISE
Phone: +975 3 321123 Punakha, Bhutan

Yargey Enterprise invites applications for the recruitment of the following post:

SL. No	Position Title	Slot	Requirements	Salary
1.	Salesperson	01	✓ Qualification: Class VIII ✓ Good communication skills in Dzongkha & English	10,000/-

Interested candidates who meet the following eligibility criteria may apply with the following documents:
- ✓ Copy of citizenship identity card
- ✓ Copy of class VIII academic transcript along with character certificate
- ✓ Copy of valid security clearance

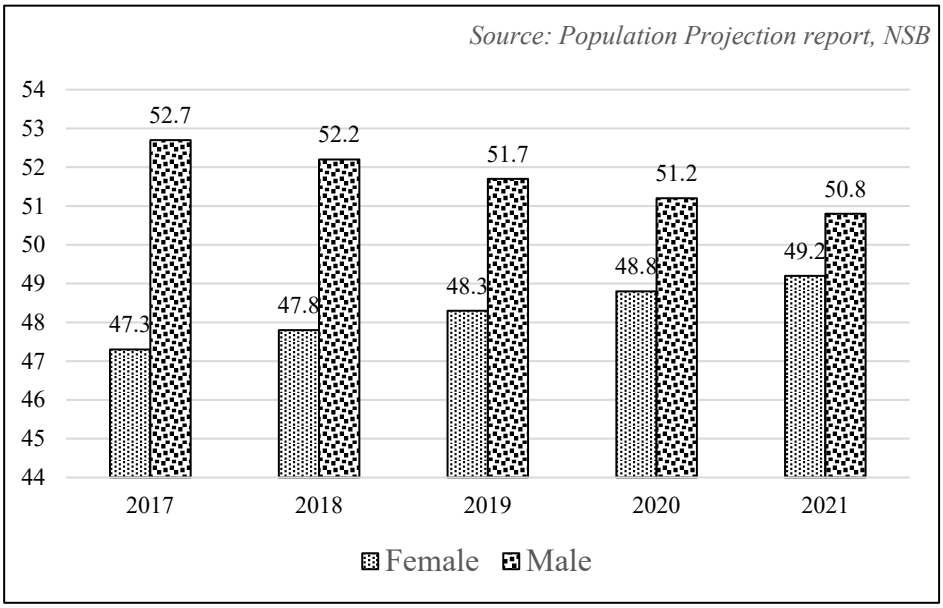
As the class captain, write a complaint letter to the proprietor of Dhendup Hardware, Bajo Town, Wangdiphodrang mentioning that the paints which you had recently purchased were expired ones and unusable. Explain that you had bought them for your class project. Your letter should persuade the proprietor to replace the paints without additional cost and the replacement be done within the week.

iii. Write a letter to the Gup, Mendrelgang Gewog, Punakha requesting him/her to seek permission from the school administration on your behalf to sanction two days leave for all the students from your Gewog to attend and participate in the annual Gewog Tshechu. Mention why it is important for the students to attend the Tshechu and how you can contribute in it.

3. You are a student of Richuka Middle Secondary School that recently organized a **Cultural Night** to raise money and donate it to the *Animal Welfare Society*. Write a report of about 150 words about the event to be published in your school magazine. **[10]**

4. Transfer of information

Write down the information shown by the figure below into **THREE** paragraphs. **[10]**



SECTION B (40 MARKS)
Answer ALL the questions

1. Given in the table below are phrasal verbs which need to be used correctly in the sentences with blank space. Remember each phrasal verb can be used only once. **[5]**

carried away	called off	run out	keep up	do without

i. People these days cannot _____ their mobile phones.

ii. We can't fry chips anymore. We have _____ of oil.

iii. While receiving certificate for the art competition, Namgay was told to _____ her good work.

iv. Yangki got _____ by his fantastic stories and forgot to check the time.

v. The annual dance party has been _____ due to the bad weather.

2. Fill in the blanks with the positive, comparative or superlative degrees of the adverbs given in the brackets. **[5]**

i. The moon shines _____ than the stars. (brightly)

ii. Of all the combatants, Tashi fought the _____. (bravely)

iii. Pema cut the papers _____ than Namgay. (fast)

iv. Deepak reached school _____ than Rigzin. (late)

v. Of all the teams in the archery tournament, our team played the _____. (well)

3. Some of the sentences given below contain errors in <u>verb usage</u>. Read them carefully and state which ones are CORRECT or INCORRECT as shown in the example. **[10]**

Example:
Dorji break his arm in playing football. (<u>incorrect</u>)

i. I am very please to inform you that our team won! (_____)

ii. Can everyone be quiet for a minute, please? (_____)

iii. Karchung enjoys decorating his grandfather's room. (_____)

iv. I can't help laughing at his funny stories. (_____)

v. The moon look very beautiful last night. (_____)

vi. Those children ought to be home at these time. (_____)

vii. The students prepared for their weekly grammar test. (_____)

viii. The teacher was so busy that he couldn't attain the meeting. (_____)

ix. Seems like it never rains whenever I remember to carry my umbrella. (_____)

x. We have chose Dawa as the new captain as he is better of the two candidates. (_____)

4. Read the given paragraph and fill in the blanks with appropriate words. **[5]**

Sonam was in his first year at college studying Science. He was quite a lazy student, and he tended to avoid (work) _____ whenever he could. In the middle of the course, his language teacher gave a report writing assignment which was to be submitted in a month's time.

Sonam intended (do) _____ the project, but he postponed (write) _____ for weeks. The night before the submission date, he sat down to do it. He considered (ask) _____ for more time to write his report but the teacher was known to be very strict, so he decided (cheat) _____ and copy his friend's work.

5. Rearrange the words to make complete sentences. You must use ALL the given words in each sentence. **[10]**

Example: ideal citizen / the nation / an / to / an / asset / is /.
Answer: An ideal citizen is an asset to the nation.

i. the / float / sky / the / in / lazily / clouds /.

ii. mother / for / Minjur / new / slippers / his / pair / a / bought / of /.

iii. wasting / must / avoid/ we / so much / time /.

iv. hard / appear / to / the / questions / quite / be /.

v. he / working / on / enjoys / weekends / not /.

vi. a / be / printing / perhaps / it / may / mistake /.

vii. I / time / to / was / however / the / bus / reach / in / late / managed /.

viii. tell / dare / he / not / lies /.

ix. plants / water / forgets / to / ever / he / hardly / the /.

x. girls / the / gracefully / young / danced / most /.

6. For each of the following questions there are four responses: A, B, C & D. Choose the alphabet corresponding to your response and CIRCLE it neatly. DO NOT circle more than ONE response. If there are more than one choice circled, NO score will be awarded. **[5]**

i. My sister says that, _____ in a foreign country is sometimes difficult.

A live
B lives
C lived
D living

ii. What a beautiful silk kira! You _____ have spent a fortune on it.

A must
B could
C should
D would

iii. That is _____ old man from Paro I was talking about last night.

A which
B whom
C the
D one

iv. Mr. Ugyen looked forward to _____ from his family again.

A hear
B heard
C hearing
D have hearing

v. If the window had not been left open, the monkey_____ have entered the house and caused a havoc.

A mustn't
B needn't
C wouldn't
D shouldn't

English I (Writing and Language) Blueprint for Classes IX and X

SL #	Chapter/topic	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total marks
SECTION A: Writing								
1	Essay Writing						Q.1 (25 marks)	25
2	Letter writing			Q.2 (15 Marks)				15
3	Report/Memo Writing				Q.3 (10 marks)			10
4	Information Transfer				Q.4 (10 marks)			10
SSECTION B: Grammar								
4	**Grammar** (Based on competencies and learning objectives given in the framework)			Q. 1 (5 marks)				5
		Q.2 (5 marks)	Q.3 (10 marks)					15
			Q.4 (5 marks)					5
						Qb.5 (10 marks)		10
				Qb.6 (5 marks)				5
	TOTAL	**2**	**8**	**30**	**10**	**10**	**40**	**100**

Reading & Literature (Paper – II)
Examination Time: Three Hours Fifteen Minutes.
Full Marks: 100
(The first fifteen minutes is for reading the Question Paper)

Instructions:

1. *This paper has four **Sections: A, B, C and D** corresponding* to *Short Stories, Essay, Poetry and Novel respectively.*
2. *Each **Section** has three types of **Questions.** Read the instructions carefully. **No marks** will be awarded for any extra questions attempted.*
3. *The intended marks for each question are given in brackets.*

SECTION A: SHORT STORY (25 marks)

Question 1a and Question 1b are COMPULSORY. You can choose to answer Question 2a OR Question 2b. Read the extract given below and answer the questions based on the story from which this extract has been taken.

Many miles he rode the first day, without so much as a glimpse of the Black Knight…

Question 1 Answer ALL the questions.

a) For each question, there are four responses: A, B, C and D. Choose the corresponding alphabet of your response and CIRCLE it. DO NOT circle more than ONE response. If there are more than one choice circled, NO score will be awarded. **[5]**

i. What was the White Knight's first misconduct?

A He stole buns from a bakeshop.
B He killed another White Knight.
C He ravished an innkeeper's daughter.
D He replaced his horse with another white horse.

ii. The White Knight had to steal someone else's white horse because his own horse

A had died during the journey.
B turned black during the quest.
C was stolen by the Black Knight.
D became lame and therefore, useless.

iii. The White Knight became irritated with other white knights as they

A asked questions about the Black Knight.
B looked younger and stronger than him.
C kept mistaking him for Black Knight.
D appeared to be whiter than him.

iv. The White Knight killed another white knight

A in an act of self-defense.
B with fearful intention.
C in a mutual combat.
D through deceit.

v. *One day this knight looked into the mirror and saw that he was a White Knight.*
The White Knight concludes that, the mirror reflects his

A dreams for future.
B important actions.
C life's challenges.
D responsibility.

b) Answer ALL the questions in the space provided in about 60 words each.

i. How is the character of the White Knight a dynamic one? Explain with **TWO** incidences from the story to support your answer. **[5]**

ii. Create an alternative title for the story, *Is He Living or Is He Dead?* by Mark Twain. Write **ONE** explanation for its appropriateness. **[5]**

Question 2 Choose ANY ONE question. Write your answers in the space provided in about 150 words each.

a) Compare the outcomes of the stories *The White Knight* by Eric Nicol and *He-y, Come on Out!* by Shinichi Hoshi as ones dealing with cause and effect. **[10]**

b) Explain any **TWO** emotions that the White Knight would have felt when he was suddenly attacked by his fellow being during his quest for the Black Knight? **[10]**

SECTION B: ESSAY (25 MARKS)

Direction: ***Read the essay given below carefully and answer the questions. Question 1a and Question 1b are COMPULSORY. You can choose to answer Question 2a OR Question 2b.***

A Litre of Light

Thomas Alva Edison lit up the world with his electric bulb in the nineteenth century. In this century it is the solar bottle bulbs of Alfredo Moser which are illuminating thousands of houses of under-privileged people in many countries. This simple yet popular invention of the Brazilian mechanic is being implemented in remote villages throughout the world. This article is the story of this invention — the solar bottle bulb or "Moser lamp" and how it is transforming people's lives.

It all started in the year 2002 in the Brazilian city of Uberaba. Alfredo Moser got the idea of a solar bottle bulb as he was figuring out a way to illuminate his workshop during one of the frequent power cuts. He realized that he could light up his workshop by hanging plastic bottles filled with water through the roof. Well, is it so simple? Surprisingly, yes.

Construction of this device is quite simple. A clean two litre plastic bottle is filled with water. Two cap-full of bleach is added to prevent the growth of bacteria and algae. Next, a hole is cut in the roof and the bottle is pressed half way into the hole. Then, the gap between the hole and the bottle is sealed with polyester resin and made waterproof, preventing rain from seeping in. The device works on the principal of refraction. Sunlight which falls on the exposed surface of the water bottle gets refracted and illuminates the room below. When measured, its luminosity is equivalent to that of a 40-60 watt incandescent electric bulb, depending upon the amount of solar insolation available on a given day

This simple invention lights up dark rooms during the day and a proper installation can last for about five years. Once Moser figured out the magic recipe, he placed the lamps in his neighbour's home and his town's supermarket. This way, the idea of solar bottle bulbs attracted attention and started to spread by word of mouth.

Clean plastic bottle filled with water

Roof tile with plastic water bottle installed in the roof

What is carbon footprint?
The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community. It is usually expressed in equivalent tons of carbon dioxide (CO_2).

Refracted sunlight as received in the interior of the house

This innovation provides free energy without carbon emissions and is environmentally friendly. The carbon footprint of manufacturing one incandescent bulb is 0.45kg CO_2. A 50 watt light bulb running for 14 hours during the daytime has a yearly **carbon footprint** of 200kg CO_2. Moreover, approximately 90 percent of the power consumed by an incandescent bulb is emitted as heat rather than visible light. As per calculations, 15000 water bulbs at 200kgs will reduce pollution at 3 million kgs for a year of use. Although it has the limitation of only working during the daytime, it has potential for further improvisation — like fitting with solar panels and battery to collect and store energy which can then be utilized during the night.

Even in its basic form it has the potential to transform the lives of millions of poor people. There are 1.5 billion people throughout the world without electricity. They live in shanty houses without proper windows and depend on candles and kerosene lamps to illuminate their homes. Kerosene lamps give poor light and produce noxious gases. Every year two million people die because of indoor air pollution. In such circumstances, these inexpensive and easy to make solar water bottle bulbs come as a breath of fresh air for these people. There is no air pollution and no possibility for accidental burns or fires.

Even though Moser invented it in 2002, it was the 'local entrepreneur' business model implemented by the MyShelter Foundation in the Philippines which has helped to spread this innovation throughout the world at a rapid rate. The MyShelter Foundation was established by Illac Diaz in 2006 with the aim of providing sustainable building solutions to the people who are in most need of low-cost infrastructure. In less than a year since inception, over 200,000 bottle bulbs were installed in communities around the world.

This simple invention is now spreading around the world. Over the last two years it has spread to more than 20 countries, like India, Bangladesh, Indonesia, Fiji, Tanzania, Kenya, Argentina and Switzerland. Thanks to the internet for spreading this knowhow to the poorest people who live in pitch dark houses without any windows. An example of this is, how a youngster from Kenya got to know about solar water bottle bulbs through the internet and how he has been able to make change in Nairobi's slums.

[*http://permaculturenews.org/2014/03/14/solar-water-bottle-bulbs*]

Question 1 Answer ALL the questions.

a) For each question, there are four responses: A, B, C and D. Choose the corresponding alphabet of your response and CIRCLE it. DO NOT circle more than ONE response. If there are more than one choice circled, NO score will be awarded. **[5]**

i. To make a "Moser lamp" we need a plastic bottle,

A a roof sheet and water.
B some bleach and water.
C a solar panel, wires and a bulb.
D a solar panel, bleach and water.

ii. The idea of making use of solar light came to Alfredo Moser when he

A was training to work with solar light.
B wanted to light up his neighbour's house.
C wanted to light up his house during a power cut.
D was working in his workshop during a power cut.

iii. The only drawback about the Moser lamp is

A it can be used only during the daytime.
B it cannot be used by people in a mass scale.
C it is very expensive to create the bulb and install it.
D its luminosity is poorer than that of a 40 watt incandescent bulb.

iv. The Litre of light technology is being spread widely by

A local entrepreneurship.
B word of mouth.
C projects.
D internet.

v. To an environmentalist, the most beneficial aspect of the Moser lamp is that it reduces pollution

A by saving money on kerosene and candles.
B since it chiefly uses water and solar energy.
C as the lamp can be made quickly and installed easily.
D as the raw materials are easily and cheaply available.

b) Answer the following questions in about 60 words each.

i. What could be some difficulties in using the Moser lamp technology in a mass scale? Mention any **TWO** and explain the. **[5]**

ii. Will it be correct to claim that using Moser lamps can reduce carbon footprint? Give **ONE** reason. **[5]**

Question 2 Choose ANY ONE question. Write your answers in the space provided in about 150 words each.

a) How does Alfredo Moser's litre of light fit into proverb that, "necessity is the mother of invention"? **[10]**

b) Read the text and write down the procedure of making a Moser lamp and installing it. **[10]**

SECTION C: POETRY (25marks)

Read the poem given below carefully and answer the questions. Question 1a and Question 1b are COMPULSORY. You can choose to answer Question 2a OR Question 2b.

The Listeners (Walter de la Mare)

'Is there anybody there?' said the Traveller,
Knocking on the moonlit door;
And his horse in the silence champed the grasses
Of the forest's ferny floor:
And a bird flew up out of the turret,
Above the Traveller's head:
And he smote upon the door again a second time;
'Is there anybody there?' he said.
But no one descended to the Traveller;
No head from the leaf-fringed sill
Leaned over and looked into his grey eyes,
Where he stood perplexed and still.
But only a host of phantom listeners
That dwelt in the lone house then
Stood listening in the quiet of the moonlight
To that voice from the world of men:
Stood thronging the faint moonbeams on the dark stair,
That goes down to the empty hall,
Hearkening in an air stirred and shaken
By the lonely Traveller's call.
And he felt in his heart their strangeness,
Their stillness answering his cry,
While his horse moved, cropping the dark turf,
'Neath the starred and leafy sky;
For he suddenly smote on the door, even
Louder, and lifted his head:—
'Tell them I came, and no one answered,
That I kept my word,' he said.
Never the least stir made the listeners,
Though every word he spake
Fell echoing through the shadowiness of the still house
From the one man left awake:

Ay, they heard his foot upon the stirrup,
And the sound of iron on stone,
And how the silence surged softly backward,
When the plunging hoofs were gone.

https://www.poetryfoundation.org/poems/47546/the-listeners

Question 1 Answer ALL the questions.

a) For each question, there are four responses: A, B, C and D. Choose the corresponding alphabet of your response and CIRCLE it. DO NOT circle more than ONE response. If there are more than one choice circled, NO score will be awarded. **[5]**

i. The dwellers in the house were

A birds.
B horses.
C spirits.
D travellers.

ii. The underlined word in the line, "*Where he stood <u>perplexed</u> and still*" means

A nervous.
B confused.
C exhausted.
D frightened.

iii. Which description fits the scene described below?
But only a host of phantom listeners
That dwelt in the lone house then
Stood listening in the quiet of the moonlight

A dangerous
B confusing
C solitary
D eerie

iv. What is most likely to happen if the Traveller gets into the house?

A He would see the listeners trying to hide away from him.
B The listeners would chase him out as they don't want to meet him.
C He would feel angry that no listener responded to his door knocking.
D He would realize there is no one living in the house.

v. "*Tell them I came, and no one answered,/That I kept my word*,"

With reference to the above dialogue of the Traveller, he displays the value of

A taking risks.
B working hard.
C being courageous.
D keeping promises.

b) Answer ALL the questions in the space provided in about 60 words each.

i. Read the lines taken from the poem and paraphrase them in your **OWN** words. **[5]**

And he felt in his heart their strangeness,
Their stillness answering his cry,
While his horse moved, cropping the dark turf,
'Neath the starred and leafy sky;
For he suddenly smote on the door, even
Louder, and lifted his head:—
'Tell them I came, and no one answered,
That I kept my word,' he said.
Never the least stir made the listeners,
Though every word he spake
Fell echoing through the shadowiness of the still house
From the one man left awake:
Ay, they heard his foot upon the stirrup,
And the sound of iron on stone,
And how the silence surged softly backward,
When the plunging hoofs were gone.

ii. Write a possible reason which could have made the Traveller take up his journey till the house of the listeners **OTHER** than mentioned in the poem. **[5]**

Question 2 Choose ANY ONE question. Write your answers in the space provided in about 150 words each.

a) Write a review on the poem. **[10]**

b) How is the atmosphere in the poem described by the poet and explain how this description gives hints about who the listeners really are? **[10]**

SECTION D: NOVEL (25 marks)

Direction: Question 1a and Question 1b are COMPULSORY. You can choose to answer Question 2a OR Question 2b. Write your responses in the space provided.

Question 1Answer ALL the questions.

a) For each question, there are four responses: A, B, C and D. Choose the corresponding alphabet of your response and CIRCLE it. DO NOT circle more than ONE response. If there are more than one choice circled, NO score will be awarded. **[5]**

i. The first memory Jonas received was of a

A sun burn.
B family at Christmas.
C ride on a sled through falling snow.
D ride on a sled resulting in a broken leg.

ii. How does Jonas keep the search planes from finding him and Gabriel?

A He uses the memories of courage.
B He hides themselves near the waterfall.
C He uses memories of cold on themselves.
D He covers their bodies with thick, dirty leaves.

iii. Jonas was not permitted to apply for a release because

A the memories would be received by the community and create instability.
B the community's people would be doomed as he was the Receiver.
C the memories would reach Elsewhere and create instability.
D time spent to train him will be wasted.

iv. An antagonist is a character or force that opposes the protagonist. Who or what is the antagonist in this story?

A Gabriel
B the Giver
C the Nurturer
D the Community

v. The Giver, Jonas, Katharine and Gabriel shared the common trait of having pale eyes.

Later, Jonas learnt the truth that pale eyes could be a requirement for those who

A were obedient and precise with language.
B could be future receivers of memories.
C shared a common birthmother.
D could see colours.

b) Answer ALL the questions in the space provided in about 60 words each.

i. Give **TWO** reasons why Jonas needed to be courageous in order to become the Receiver of Memory? **[5]**

ii. Comment on the contradictory roles of Jonas' father as a nurturer and a killer. **[5]**

Question 2 Choose ANY ONE question. Write your answers in the space provided in about 150 words each.

a) Draw a flowchart to show Jonas' escape plan which he made with the Giver's help. **[10]**

b) Using the following areas, explain the differences between Jonas' community and our world: **[10]**

- family,
- career,
- crime and
- death.

English II (Reading and Literature) Blueprint for Classes IX and X

SL #	Chapter/topic	Remembering	Understanding	Applying	Analysing	Evaluating	Creating	Total marks
Section A: Short Story								
1	(MCQ) (compulsory)	Q1a (i) (1 mark)	Q1a (ii) (1 mark)	Q1a (iii), Q1a (iv) (2 marks)	Q1a (v) (1 mark)			5
2	SRQ (compulsory)			Q1b (i) (5 marks)			Q1b (ii) (5 marks)	10
3	ERQ (Choice based)				Q2(a) OR Q2(b) (20 marks)			10
SECTION B: Essay								
4	(MCQ) (compulsory)		Q1a (i), Q1a (ii) (2 marks)	Q1a (iii), Q1a (iv) (2 marks)	Q1a (v) (1 mark)			5
5	SRQ (compulsory)				Q1b (i) (5 marks)	Q1b (ii) (5 marks)		10
6	ERQ (Choice)			Q2(a) OR Q2(b) (10 marks)				10
SECTION C: Poem								
7	MCQ (compulsory)		Q1a (i), Q1a (ii) (2 marks)	Q1a (iii), Q1a (iv) (2 marks)	Q1a (v) (1 mark)			5
8	SRQ (compulsory)		Q1b (i) (5 marks)				Q1b (ii) (5 marks)	10
9	ERQ (Choice based)				Q2(a) 0R Q2(b) (20 marks)			10
SECTION D: Novel								
10	MCQ (compulsory)	Q1a (i) (1 mark)	Q1a (ii), Q1a (iii) (2 marks)	Q1a (iv) (1 mark)	Q1a (v) (1 mark)			5
11	SRQ (compulsory				Q1b (i) (5 marks)	Q1b (ii) (5 marks)		10
12	ERQ (Choice based)			Q2 (a) OR Q2 (b) (20 marks)				10
	TOTAL	**2**	**12**	**52**	**54**	**10**	**10**	**100**

MATHEMATICS

Part II: Sample Paper

SECTION A [40 MARKS]
ANSWER **ALL** QUESTIONS

Question 1

Direction: For each question, there are four alternatives: A, B, C and D. Choose the correct alternative and circle it. **DO NOT** circle more than **ONE** alternative. If there is more than ONE choice circled, NO score will be awarded.

i) Identify the correct relation

A $\sqrt[n]{ab} = \sqrt[n]{a} \times \sqrt[n]{b}$

B $\sqrt[n]{a} = a^n$

C $\sqrt{200} = \sqrt{100 \times 2} = 10 \times 2 = 20$

D $\sqrt{18} = \bar{2}\sqrt{3}$

ii) Which statement below is true.

A Two Geometric Progressions with same common ratios but different first terms will have same last terms

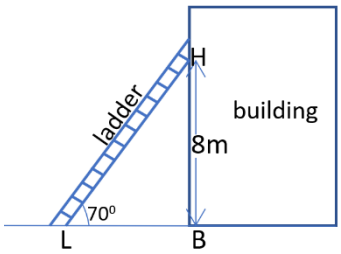
B Two Arithmatic Progressions with same first terms may or may not have the same last terms

C Common ratio applies to Arithmatic Progressions and common difference applies to Geometric Progressions

D If common ratio and common difference are same then an Arithmatic Progression will be the same as a Geometric Progression

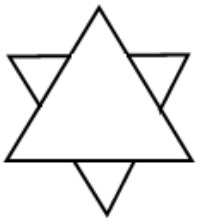
iii) A ladder is used to fix a light bulb that is 8m above the base of the building as shown in the sketch on the right.
What is the length of the ladder?

A 2.9m C 8.5m
B 17.3m D 23.5m



iv) How many lines of symmetry does the figure have?

A 6 C 4
B 5 D 3



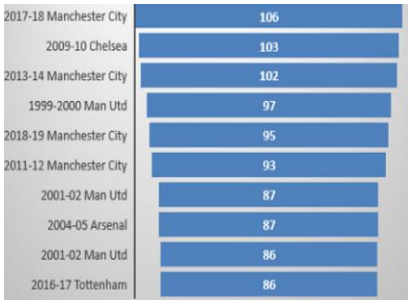
v) Dawa calculated the mean, median and mode from the data of the top ten most goals scored in a season in English Premiere League.
Which is the correct calculation?

A Mean: 92.2 Median: 92 Mode: 87, 86

B Mean: 93.2 Median: 93 Mode: 87, 86

C Mean: 94.2 Median: 94 Mode: 87, 86

D Mean: 95.2 Median: 95 Mode: 87, 86



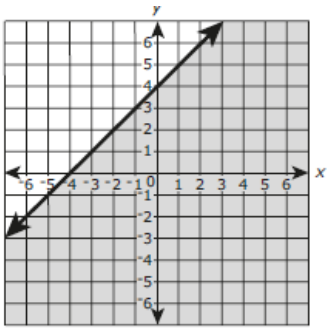
vi) All shapes given below have the same surface area.

Identify which of these shapes will have the maximum volume?

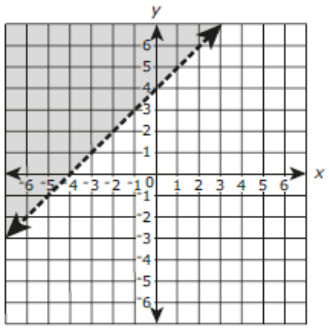
A Cylinder
B Cone
C Sphere
D Cube

vii) Which of the following graphs represents the solution set for the inequality $y \geq x-4$

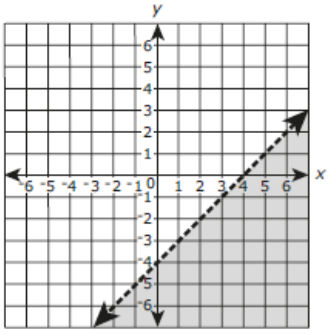
A



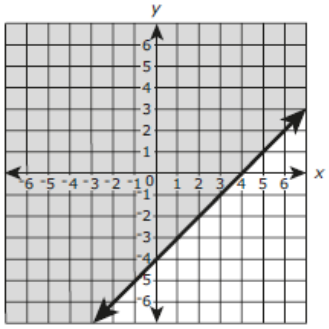
B



C



D



viii) Yangchen has Nu 240,000. She wants to invest the money to buy Penden Cement Company Limited Shares with a face value of Nu 1000 which were being sold at a premium of 15%. How many shares can she buy?

A 208
B 209
C 240
D 282

ix) Karma is building a rectangular table with an area of 18,000 cm^2. He wants to put wood trim around the four edges. What is the shortest length of trim he could use (nearest to hundredth)?

A 134.16 cm
B 475.60 cm
C 536.66 cm
D 4500 cm

x) The equations shown in the table below can be used to predict the population, P, of each town in t years from today.

Population Predictions	
Town	**Equation**
Sharling	P = 800 – 20t
Lholing	P = 500 + 15t
Nubling	P = 10t + 950
Jangling	P = –50t + 600

Based on the equations in the table, which statement about the populations of these towns is true?

A The populations of all four towns are increasing.
B The populations of all four towns are decreasing.
C The populations of Sharling and Jangling are each increasing.
D The populations of Sharling and Nubling are each decreasing.

xi) The dimensions and capacity of a cylindrical tin can are given on the right.
Determine the dimensions of the most efficient cylindrical tin can that can hold 350 mL of fruit juice.

RADIUS 3.5 CM
HEIGHT 9.1 CM
CAPACITY 350.03 ML

A Radius: 4.49 Height: 5.53
B Radius: 4.50 Height: 5.51
C Radius: 4.51 Height: 5.48
D Radius: 4.52 Height: 5.46

xii) Seydey needs to pick two marbles from a bag that contains 5 green marbles, 5 red marbles, and 10 yellow marbles all of the same size and shape.
She picks the first marble. She picks the second marble without returning the first marble to the bag.
Which expression represents the probability that Seydey will select two red marbles?

A $\frac{5}{20} \times \frac{4}{19}$
B $\frac{5}{20} \times \frac{4}{20}$
C $\frac{5}{20} \times \frac{5}{19}$
D $\frac{5}{20} \times \frac{5}{20}$

xiii) Four groups were given names of four 2-D shapes and asked to draw the diagram of the shape with symmetry.
The completed works of each group are given below:

GROUP 1

Figure's name	Diagram with symmetry	Number of lines
Equilateral triangle		3
Isosceles triangle		1
Scalene triangle		0
Square		4

GROUP 2

Figure's name	Diagram with symmetry	Number of
Parallelogram		0 1
Quadrilateral		0
Regular Hexagon		6
Circle		Infinite

GROUP 3

Figure's name	Diagram with symmetry	Number of lines
Scalene triangle		0
Square		4
Rectangle		2
Rhombus		2

GROUP 4

Figure's name	Diagram with symmetry	Number of lines
Square		4
Rectangle		2
Rhombus		2
Parallelogram		0

Which group did not complete the work correctly?

A Group 1 C Group 2
B Group 3 D Group 4

xiv) Which matrix operation is possible?

A $\begin{vmatrix} 1 & 2 \\ 0 & 3 \end{vmatrix} + \begin{vmatrix} 1 \\ 1 \end{vmatrix}$ B $\begin{vmatrix} 1 & 2 \end{vmatrix} \times \begin{vmatrix} 1 \\ 2 \end{vmatrix}$ C $\begin{vmatrix} 1 & 1 \end{vmatrix} - \begin{vmatrix} 1 & 2 \\ 0 & 3 \end{vmatrix}$ D $\begin{vmatrix} 1 & 1 \end{vmatrix} \times \begin{vmatrix} 2 & 3 \end{vmatrix}$

xv) You withdrew Nu 2000 in Nu 100 and Nu 50 notes from the bank.
Which equation can be used to model this situation to find the number of Nu 50 notes when the number of Nu 100 notes are given. (h represents number of Nu 100 notes, f represents number of Nu 50 notes)

A 100h + 50f = 2000
B 100h – 50f = 2000
C 2000 + 100h = 50f
D 2000 + 50f = 100h

xvi) The table below shows the extra amount of money a parking fee collector earned every day for two weeks.

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	250	390	230	350	480	590	850
2	230	340	240	380	470	650	830

Which statement about the data is true?

A There is negative co-relation between the income in week 1 and week 2.

B The mean and range for week 1 = the mean and range for week 2.

C She earned more amount in week 1 than in week 2.

D The median income is the same.

xvii) Which conversion from degree to radians is incorrect?

A $90^\circ = \frac{\pi}{2} rad$

B $60^\circ = \frac{\pi}{3} rad$

C $40^\circ = \frac{\pi}{4} rad$

D $30^\circ = \frac{\pi}{6} rad$

xviii) A discount of 20% is offered on the marked price of Nu 3000 for a summer jacket. Determine the selling price.

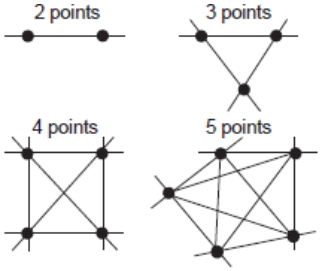
A Nu 3600

B Nu 3200

C Nu 2700

D Nu 2400

xix) These diagrams show points joined by line segments.
If the pattern is continued in this manner, what type of relationship will be seen between the number of points and the number of line segments?



A The relationship cannot be determined

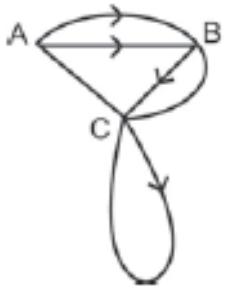
B The relationship is non-linear

C The relationship is constant

D The relationship is linear

xx) Match the correct adjacency matrix to the given digraph.

A $\begin{bmatrix} 0 & 2 & 1 \\ 0 & 0 & 1 \\ 1 & 1 & 1 \end{bmatrix}$ B $\begin{bmatrix} 1 & 1 & 1 \\ 0 & 0 & 1 \\ 0 & 2 & 1 \end{bmatrix}$ C $\begin{bmatrix} 0 & 0 & 1 \\ 0 & 2 & 1 \\ 1 & 1 & 1 \end{bmatrix}$ D $\begin{bmatrix} 0 & 1 & 1 \\ 0 & 2 & 1 \\ 1 & 1 & 1 \end{bmatrix}$



SECTION B [60 MARKS]
ATTEMPT **ANY SIX** QUESTIONS

Question 2(a) [4]

The following is the information about approximate nutritional value of dried fruits per cup.

	Almonds	Cashew	Raisins
Carbohydrates	40	45	15
Proteins	26	22	10
Fats	72	64	85

Two matrix multiplication situations are set-up below.

Multiplication Situation I

$$[6 \quad 3 \quad 4]\begin{bmatrix}40 & 45 & 15\\ 20 & 22 & 10\\ 72 & 64 & 85\end{bmatrix}$$

Multiplication Situation II

$$\begin{bmatrix}40 & 45 & 15\\ 20 & 22 & 10\\ 72 & 64 & 85\end{bmatrix}[6 \quad 3 \quad 4]$$

i) Choose the multiplication situation that will give information about the nutritional value of each type of food in 6 cups of almonds, 3 cups of almonds and 4 cups of raisins. [2]

ii) What information will the multiplication situation that you have not chosen in (i) above give? [2]

Question 2(b) [3]

A 15 cm long candle is lit. It burns at the rate of 0.25 cm/min.

i) Write an equation to calculate the height, h, of the candle after t minutes.

ii) What will be the height of the candle after it burns for 30 minutes?

Question 2(c) [4]

Show that $\text{Sin}^2\theta + \text{Cos}^2\theta = 1$

Question 3(a) [3]

Draw the lines of symmetry for a square.

Draw the planes of symmetry for the shape given below.

Question 3(b) [3]

The longest distances jumped in the Women's Olympic for the years 1964 to 2000 are shown in the table.

i) Create a scatter plot and draw a line of best fit.

ii) (Use the graph paper provided)

iii) Estimate the correlation coefficient.

Women's Long Jump	
1964	6.76
1968	6.82
1972	6.78
1976	6.72
1980	7.06
1984	6.96
1988	7.40
1992	7.14
1996	7.12
2000	6.99

Question 3(c) [4]

Gaki and Geeta invested same amount of money on compound interest and simple interest at 10% per annum for five years, respectively. The difference in their interests was Nu 607.75

i) How much did each person invest?

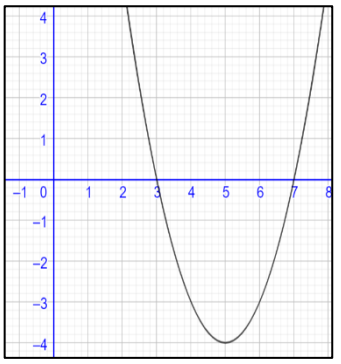
ii) Who made a better investment?

Question 4(a) [5]

i) Determine the equation of the parabola given in the diagram. [1]

ii) How would the equation change, if the parabola is transformed 4 steps upward and 4 steps backwards, and the value of a changes to 0.75? [2]

iii) Kinley claims that the roots of the new parabola will be x=1, 1. Draw the new parabola on the graph paper given and verify Kinley's claim. [2]



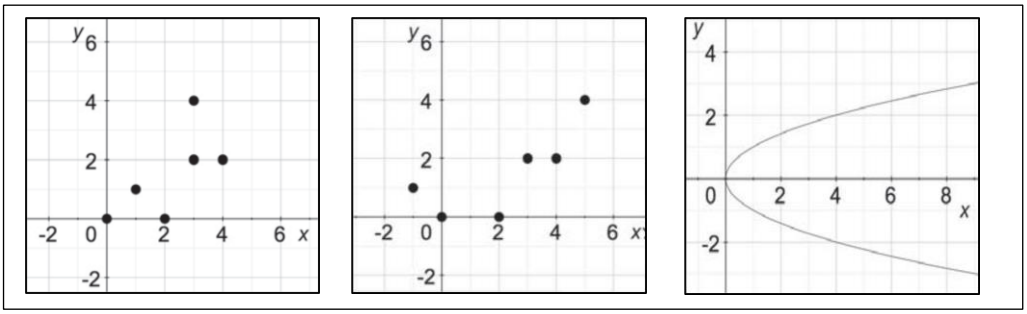
Question 4(b) [5]

Fill the table with appropriate words. (0.5X10 = 5)

Examples of Data Collection Methods	Questionnaire	Survey	…… ……..	
Central Tendencies	…… …..	…… …….	…… ……..	
Representing Data	Bar Graphs	…… …….	…… ……..	…… …….
……	Frequency Polygon	Normal Distribution	U-shaped graph	
…… ..	Measure of the relation between two sets of data			
…… ..	Maximum	Minimum	Q, Q2, Q3	

Question 5(a) [3]

Identify the graphs as functions and relations. Give reason for your decision.



A B C

Question 5(b) [4]

A birthday cake is in the shape of a cylinder.
There are two layers of cake and one layer of icing. Each layer of cake has radius 12 cm and height 5 cm. The icing, between the two layers of cake, has radius 12 cm and height 2.5 cm.

i) Calculate the volume of icing in the birthday cake. [2]

ii) The top and curved surface of the birthday cake are covered with chocolate. What area of the birthday cake that is covered with chocolate. [2]

Question 5(c) [3]

The two graphs below show the saving pattern. Using the graph given find:

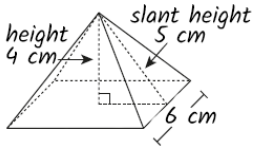
i) The range of amount saved by most people.

ii) What happens to the number of people as saving increases?

iii) Lower and upper limit of the amount that is saved by 50% of the population?

Question 6(a) [5]

This diagram shows a right square pyramid and some of its dimensions.



What is the volume of the pyramid?

Calculate the area of plastic required to make a tent in the shape of the square pyramid?

Question 6(b) [3]

A sales person is paid Nu 10,000 each month plus an additional 5% commission on sales for the month. Determine the total income of the sales person in a month in which sales were Nu 7,000,000.

Question 6(c) [2]

Convert the linear equation $3x - 4y = 12$ to slope and y-intercept form.

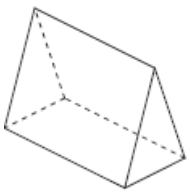
Question 7(a) [3]

Pema bought 5 pens and 3 notebooks for Nu 95, while, Nisha 4 pens and 2 notebooks for Nu 70. What is the cost of each pen and each notebook.

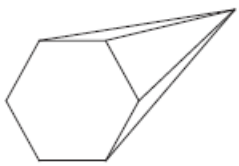
Question 7(b) [3]

Show the planes of symmetry of each shape.

i) prism with an isosceles triangle base



ii) regular hexagon-based pyramid



Question 7(c) [3]

Test scores out of 100	
4	4
5	2 8
6	
7	0 1 2 2 3 5 5 5 8 9 9
8	0 5 8 8 9
9	2 2 4 8 9

i) From the plot above find the median, mode and range of the data.

ii) Estimate the mean.

Question 8(a) [3]

$180^0 = \pi$ rad. Use the above relation to convert the given angles.

i) 30^0 into radians ii) 520^0 into radians iii) $\frac{\pi}{6}$ rad into degrees

Question 8(b) [4]

Draw an obtuse angled triangle.

Construct a circumcircle around the triangle. What is the radius of the circumcircle?

Question 8(c) [3]

Store A
Item: Summer Jacket
Price: Nu 2500
Discount: 25%

Store B
Item: Summer Jacket
Price: Nu 2200
Discount: 15%

Calculate and show of the following options is better for the buyer?

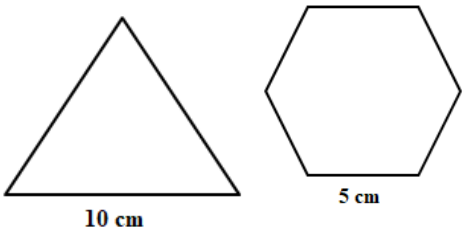
Question 9(a) [3]

A student wants to join the class doing better in Mathematics after mid-term. Which section would you recommend him to join. Why?

Record of Mathematics marks scored in mid-term for Section C and Section D		
Range of marks	**No. of students**	
	Section C	**Section D**
0 – 10	0	1
10 – 20	1	1
20 – 30	3	3
30 – 40	11	10
40 – 50	12	12
50 – 60	6	2
60 – 70	4	4
70 – 80	2	6
80 – 90	1	7
90 – 100	0	1

Question 9(b) [3]

These two regular polygons have a perimeter of 30 cm each.



i) Calculate the areas of each polygon.

ii) Which polygon is more efficient? Why?

Question 9(c) [4]

Find the sum of the first 20 terms of the sequence

10, 12, 14, 16, …

FORMULAE

Strand A : Numbers and Operations

Discount% $= \frac{\text{SP}}{\text{MP}} \times 100\%$ Discount $= MP - SP$

Markup=MP-CP %markup $= \frac{\text{markup}}{\text{CP}} \times 100\%$

SI=prt or $\frac{PRT}{100}$ A $= p\left(1+\frac{r}{n}\right)^{nt}$ or $p\left(1+\frac{R}{n\times 100}\right)^{nt}$

DA $= fv \times r \times n$ Yield% $= \frac{DA}{OI} \times 100\%$

$T_n = a + (n-1)d$ $S = \frac{n}{2}(a+b)$

$S = \frac{n}{2}\left[2a + (n-1)d\right]$ $t_n = ar^{n-1}$

$S_n = \frac{a(r^n - 1)}{r-1}$ or $\frac{a(1-r^n)}{1-r}$, $r \neq 1$ $S_n = \frac{lr - a}{r-1}$

$S_\infty = \frac{a}{1-r}$ A.M.$= \frac{(a+b)}{2}$ G.M.$= \sqrt{ab}$

Strand B : Patterns and Algebra

$f(x) = ax^2 + bx + c$

$f(x) = a(x-p)(x-q)$

$f(x) = a(x-h)^2 + v$

Strand C : Measurement

Volume:

rectangular prism	V = lwh	cube	$V = e^3$
any prism	V = Ah	pyramid	V = Ah
cylinder	$V = \pi r^2 h$	cone	$V = \pi r^2 h$
sphere	$V = \pi r^3$		

Surface Area:

rectangular prism	SA = 2(lw + wh + lh)	cube	$SA = 6s^2$
any prism	SA = 2A + hP	pyramid	SA = A + Area of lateral faces
cylinder	$SA = 2\pi r^2 + 2\pi rh$	cone	$SA = \pi r^2 + \pi rs$
sphere	$SA = 4\pi r^2$		

Strand E : Data management and probability

Mean $= \frac{\sum fx}{\sum f}$

Class X

Part I: Test Blueprint

Section A - MCQ (40 marks)

Strands	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Weightage
Numbers and Operations	Q1(i)[2]	Q1(xiv)[2]	Q1(viii)[2] Q1(xviii)[2]	Q1(xx)[2]			**10**
Patterns and Algebra		Q1(ii) [2]	Q1(vii)[2]	Q1(x)[2]	Q1(xv)[2]		**8**
Measurement	Q1(vi)[2]	Q1(xvii) [2]	Q1(iii)[2]	Q1(ix)[2]	Q1(xiii)[2]		**10**
Geometry			Q1(xi)[2]	Q1(iv)[2]			**4**
Data Management and Probability		Q1(xii)[2]	Q1(xix)[2]	Q1(xvi)[2]	Q1 (v)[2]		**8**
Total	**4**	**8**	**12**	**10**	**6**	**0**	**40**

Section B (80 Marks)

Strands	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Weightage
Numbers and Operations		Q2(a)[4]	Q6(b)[3] Q9(c)[4]	Q3(c)[4]	Q8(c)[3]		**18**
Patterns and Algebra		Q5(a)[3]	Q2(b)[3] Q6(c)[2]	Q7(a)[3]	Q4(a)[5]		**16**
Measurement			Q5(b)[4] Q8(a)[3]	Q2(c)[3] Q6(a)[5] Q9(b)[3]			**18**
Geometry		Q3(a)[3]	Q7(b)[3]			Q8(b)[4]	**10**
Data Management and Probability	Q4(b)[5]	Q7(c)[4]	Q3(b)[3]	Q5(c)[3]	Q9(a)[3]		**18**
Total	**5**	**14**	**25**	**21**	**11**	**4**	**80**

BIOLOGY

SECTION A (40 Marks)

*Answer **all** the question*

Question 1

A. ***Read the following questions carefully. For each question, there are four alternatives A, B, C and D. Choose and CIRCLE the most correct alternative. Do not circle more than ONE alternatives. If there are more than ONE alternatives circled, no score will be awarded. [25]***

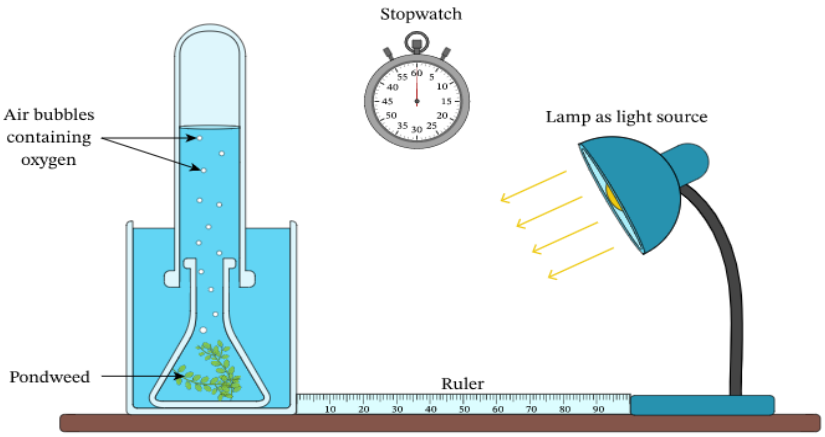
i. Stomach cancer is one of the common diseases found in today's society. This disease has a major impact on

A. carbohydrate digestion
B. protein digestion
C. fat digestion
D. vitamins and nutrient digestion

ii. A physiologist is tasked to find the rate of filtration in the glomeruli of the kidneys. The best experimental design would be to inject a substance which

A. cannot pass through the glomerular capillaries
B. can pass through the glomerular capillaries but is totally reabsorbed in the renal tubules
C. can pass through the glomerular capillaries but is partially reabsorbed in the renal tubules
D. can pass through the glomerular capillaries but is partially reabsorbed in the renal tubules

iii. A student set up an experiment in the laboratory as shown below. What must be changed to increase the rate of oxygen evolution in the experiment?



1. Replace the beaker with large container
2. Move the light source closer to the beaker
3. Increase the power of the light source

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 onlyPage **1** of **12**
D. 1, 2, and 3

iv. Our skin cells divide to again and again to produce new skin cells.

Original Skin Cell

If the original skin cell contains chromosome number as shown in the above diagram, then number of chromosomes in daughter cells would be

A

B

C

D

v. The Royal Government of Bhutan does not allow travellers from foreign countries to bring plants, fruits, vegetables, animals or other living organism into the country. One of the main reasons for the implementation of this policy is to

A. increase the native species population
B. prevent from the pollution of environment by exotic species
C. conserve and protect native species from extinction
D. prevent from hybridization of native species with exotic species

vi. In the figure given below, a population of red beetles have gradually evolved into a new population of green beetles. From evolutionary point of view, the emergence of a green beetles population is caused by

A. adaption and natural selection
B. adaptation and mutation
C. mutation and natural selection
D. adaptation, mutation, and natural selection

vii. Our desire to have pet dogs with desirable traits are achieved through artificial selection. This has led to the emergence of dogs with differing appearances. From evolutionary point of view, this would change the
A. allele and gene frequency
B. gene and DNA frequency
C. DNA and phenotype frequency
D. allele and phonotype frequency

viii. Mr Karma is tasked to observe bacterial cell and onion peel cell in one of the biology lessons. Which of the following would help Mr Karma to differentiate onion peel cell from bacterial cell?
A. Cell wall and ribosome
B. Cytoplasm and cell membrane
C. Plasmid and nucleoid
D. Food granules and nucleus

ix. A man with a blood group **A** lost considerable amount of blood in a car accident. As a biology student, you would advise him to look for a donor with
1. *a*-antibodies in a blood
2. *b*-antibodies in a blood
3. *ab*-antibodies
A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2, and 3

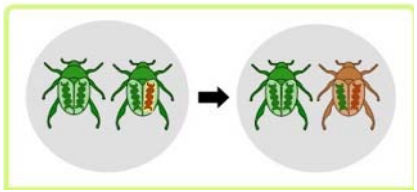
x. A students while on hiking took a photograph as shown below. If a student is to publish this finding in a scientific journal, it must be reported as

A. parasitism existing in nature
B. mutualism existing in nature
C. commensalism existing in nature
D. ammensalism existing in nature

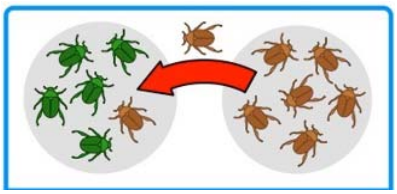
xi. If a man with a genotype of *Tt* for tall height marries a woman with a genotype of *tt* for short height, the probability of offspring with tall height is

A. 25%
B. 50%
C. 75%
D. 100%

xii. From one line of scientific thought, organisms are also believed to have evolved as a result of genetic drift or by chance events. Which of the following figure represents the evolution of beetles as result of chance events?

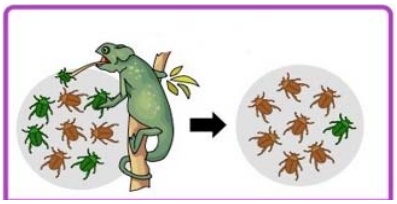


A.



B.

C.



D.

xiii. In a grand challenge competition, you are given a task to design a container that allow some objects to enter and leave without resistance, some objects to travel only one way, and other objects not to enter the container at all. The working of a container must demonstrate the principle of

A. selective reabsorption
B. selective secretion
C. selective permeability
D. selective ultrafiltration

xiv. Under low oxygen conditions, our body cells produces an intermediate product called lactic acid. In such conditions, food particles in our body cells have completed
A. glycolysis
B. glycolysis and Krebs cycle
C. glycolysis, Krebs cycle, oxidative phosphorylation
D. glycolysis, Krebs cycle, oxidative phosphorylation, and electron transport chain

xv. Suppose a woman from your locality, who is a carrier of colour blindness, is married to a man from another locality. What percentage of male offspring will have colour blindness in this family?
A. 25%
B. 50%
C. 75%
D. 100%

xvi. In a science exhibition, you are asked to build a plant-like a structure that absorbs water from a container. Your plant-like a structure must carry water from its lower portion to other aerial regions. Which of the following xylem tissues would you study the most to build a plant-like a structure that can carry water from its lower portion to aerial regions?
A. Tracheids and vessels
B. Tracheids and xylem parenchyma
C. Vessels and xylem fibre
D. Xylem parenchyma and xylem fibre

xvii. If you take two of Sanjeet's sperm cells, then the genetic information of the these two sperm cells will be
A. similar
B. same
C. slightly different
D. different

xviii. Suppose in your biology project work, you are given a task to create a robot that acts and behaves similar to human beings. Your project demands you to create robot that gives automatic or involuntary response irrespective of the stimuli. Which part of the nervous system would you study to build a robot that can give involuntary response?
A. Cerebellum
B. Cerebrum
C. Brain
D. Spinal cord

xix. Plants are said to control the concentration of air pollutants that cause global warming. This happens through a biological process called photosynthesis. The part of the photosynthesis that closely corresponds to the anti-global warming effect of plant is

A. light reaction
B. light independent reaction
C. photolysis
D. phytolysis

xx. Let's say that you want to make a model of prokaryotic cells. The group of cell organelles you would use are

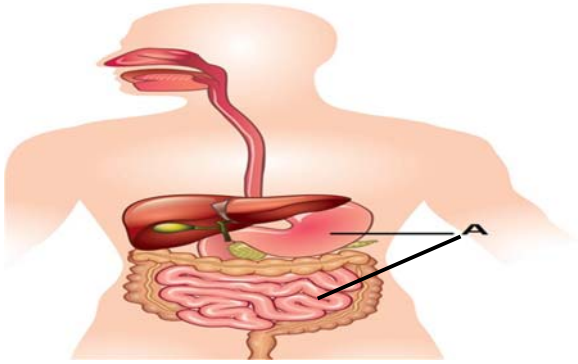
A. cell wall, plasma membrane, Chloroplast, flagella, cytoplasm, pilli, desmosome
B. cell wall, plasma membrane, mitochondria, flagella, cytoplasm, pilli, desmosome
C. cell wall, plasma membrane, desmosome, chloroplast, flagella, cytoplasm, pilli, desmosome
D. cell wall, plasma membrane, plasmid, episomes, flagella, cytoplasm, pilli, desmosome

xxi. Bhutan is blessed with clean natural environment. As per the national policy, Bhutan is mandated to maintain at least 70 percent of the forest coverage. Besides, there are other values that provide indirect supporting mechanism to conserve Bhutan's natural environment. In this regard, which of the following adds in the conservation of Bhutan's natural environment?

1. Cultural and spiritual values
2. Recreational values, such as botanical parks and gardens
3. Economical values to maintain national economic status

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2, and 3

xxii. Alcohol gives immediate relief to our body from pain or muscle fatigue. For this, it assumed that the alcohol is absorbed from the body organs labelled **A** in the diagram below.



Which of the following piece evidence best support the above assumption?

A. Alcohol molecule is small in size that it gets easily digested by enzymes
B. Alcohol molecule is unique that it does not require enzymes for digestion
C. Alcohol molecule is small in size that it is easily absorbed by walls of the structures labelled A

D. Alcohol molecule does not require complex digestive process

xxiii. The picture shown below shows one of the birth control pills taken orally. Some of the facts about using birth control pills are:

1. birth control pills are 99 percent effective
2. hormones in the bill have side effects
3. birth control pills give no protection against STDs

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2, and 3

xxiv. Naturalists assume that the both capped languor and golden languor found in Bhutan have evolved from a common ancestor. Many research in nature claim that both types of languor have arrived in Bhutan at the same time but could not mix due to rivers and mountains. As a result, a population of capped languor speciated into golden languor. According to you, the speciation of golden languor is a result of

A. Isolation and mutation
B. Isolation and migration
C. Isoation and natural selection
D. Isolation and migration

xxv. Micro-organisms, such as bacteria and fungi are always considered a diseases causing organism. In contrary to this belief, they are widely used in our day to day life. Which of the following describes the use of bacteria and fungi in our daily lives?

1. As a source of medicine, such as antibiotics
2. As an agent for cleaning environment through anaerobic digestion
3. As a source of enzymes in food beverage industries

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2, and 3

B. Fill-in-the-blanks with appropriate word/words. ***[5]***

i. These days, we could see different varieties of rice as a result of genetic technologies, such as hybridisation and genetic engineering. These kinds of genetic technologies contribute towards the evolution of new varieties of rice through change in the _____ frequency.

ii. When chronic alcoholics suffer from conditions, such as thirst, dehydration; or contain high concentration of ions in the blood, it is an issue related to the _____ of nephrons.

iii. Dorji took breakfast containing high content of beans. His body cells will receive _____ as the final product of the digestion.

iv. The release of African giant catfish into *Toorsa* River at Phuentsholing alarmed environmentalists in Bhutan as African giant catfish is an _____.

v. Daughter cells in meiotic division always contain different genetic composition due to _____.

C. ***Match each item of Column A with the most appropriate item of Column B. Rewrite the correct pairs by writing the number and the corresponding alphabet in the spaces provided. [5]***

Column A	**Column B**
i) Conducting tissue	a) Phloem
ii) Oxygen	b) By product
iii) Colour blindness	c) End product
iv) Haploid	d) Sex-linked disease
v) Universal donor	e) Mitosis
	f) Meiosis
	g) O blood group

D. State True of False against each statement. ***[5]***

i. Ethyl alcohol is a product of incomplete respiration.
ii. Spinal cord is one of the parts of the central nervous system that analyses nerve impulses.
iii. Each of us receive one allele from father and another allele from mother.
iv. Dominant gene is always selected by nature in natural selection.
v. Salting preserves fish or meat through osmosis.

SECTION B (60m marks)

Answer any SIX questions

Question 2.

a) Suppose you had a breakfast containing high content of protein. Outline the steps involved in the digestion of your breakfast in the alimentary channel. [2]
b) If you were an environmental officer, would you give environmental clearance to construct highway via national park? Justify your opinion. [2]
c) Do humans contribute towards the evolution of an organism? Explain. [2]
e) The experimental set-up shown below is to examine the effect of carbon dioxide concentration on the rate of photosynthesis. Answer the questions that follow.

Procedure:

Step 1. Take an aquatic plant and set up the experiment as shown in Figure 3.1

Step 2. Keep the set-up near the light source and count the number of bubbles evolved in a specified time. Record the observation in Table 3. 1.

Step 3. Add 5 g of $NaHCO_3$ into the flask and record the number of bubbles evolved in a specified time. Record the observation in Table 3.1.

Step 4. Add 10 g and 15 g of $NaHCO_3$ into the flask and record the number of bubbles evolved respectivey. Record the observations in Table 3.1.

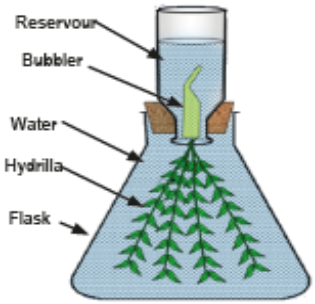


Figure 3.1. Wilmott's bubbler.

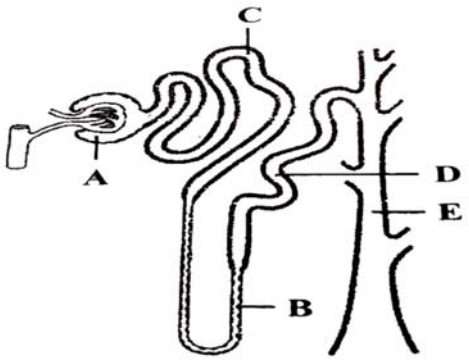
Step 5. Plot the graph showing number of bubbles evolved against the amount of $NaHCO_3$ using spreadsheet or graph paper.

i. Develop research question(s) for the above experimental set-up. [1]
ii. State the hypothesis for the above experimental set-up? Outline. [1]
iii. Identify independent and dependent variables of the above experimental set-up. [1]

f) Define allele. [1]

Question 3.

a) Bacteria that cause diarrhea contain much simpler structure than human skin cell. How? [2]
b) Bhutan's environment is connected to spiritual or religious values. Explain.[1]
c) In the recent years, there were news about the sighting of tigers in many places of Bhutan. This indicates that the Bhutanese environment has healthy population of tigers. Comment on the status of ecosystems in Bhutan from the point of tiger population. [2]
d) Study the figure given below and answer the questions that follow.



i. Name the parts labelled A and C. [1]
ii. How would body homeostasis change if the parts labelled A is non-functional? Claim with reasons [1]

e) The latest annual White-bellied heron population survey recorded 19 adults and three sub-adult herons. But the survey found no birds along Phochhu, Mochhu, Adha and Harachhu. According to the Royal Society for Protection of Nature (RSPN), it is worrying as the bird species is disappearing from the habitats which were once used abundantly.

The RSPN claims that the decrease in population is mainly due to increasing disturbance on their habits as a result of developmental activities going on along Punatsangchhu and also the disturbances on flight routes.

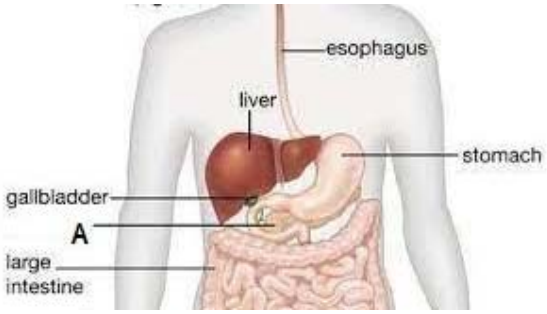
i. As a science student, outline strategies to protect the population of White-bellied heron. [2]

Question 4.

a) The idea of using plants to control global warming/climate change is a rising topic. What makes plants suitable option to control the global warming? [1]

b) Suppose you have a potted plant in your house. Design an experiment to demonstrate the downward translocation of food in it? [3]

c) Study the diagram given below and answer the questions.



i. Name the structure labelled in the above diagram. [1]

ii. What would happen to our body cells if the part labelled A is removed? Explain with reasons. [2]

d) Explain the evolution of yaks from the point of mutation theory. [1]

e) Which amongst Lamarkism, Darwism, or mutation theory is more credible in explaining the mechanism of evolution? Claim with reason. [2]

Question 5

a) Responses developed by the brain are mostly rationale, while responses developed by the spinal cord are mostly involuntary or automatic. How? [2]

b) Osmosis is one of the processes by which water molecules move in and out of cells. Mention two areas where the principles of osmosis is applied in our daily lives. [2]
c) Explain the composition of blood in terms of cellular components. [3]
d) Bacteria are widely used in our daily lives. One of the potential of bacteria is their capacity to carry out anaerobic digestion. In this light, outline as how you would make use of bacteria to treat sewage wastes. [3]

Question 6

a) Is aerobic respiration more efficient than anaerobic respiration? Explain in terms of products. [2]
b) Name two structures that make prokaryotic cells similar to plant cells. [1]
c) If you take two of Karma's skin cells, would they have same genetic composition? Why? [2]
d) Cells also divide when sex cells (sperm and egg) are being produced.

Original Cell

i. If the original cell contains chromosome number as shown in the above diagram, what chromosome number would egg cells would contain? [1]
ii. Would the new egg and original cell contain same genetic composition? Why? [2]

e) National park is one of the strategies to conserve biodiversity in Bhutan. In your opinion is it the best strategy to conserve biodiversity? Justify. [2]

Question 7

a) How do we inherit parental characters? Comment based on the allele. [2]
b) Without light, plants fail to manufacture food. Comment from the point of light and dark reaction. [2]
c) If a robot responds to stimuli automatically, which part of the central nervous system does it function alike? Why? [2]
d) Give one significance of Krebs cycle. [1]
e) Xylem is one of the conducting tissues that conduct water from roots to aerial parts of the plants. Design an experiment to determine the uptake of water by xylem. [3]

Question 8

a) What is the role of liver in digestion? [1]
b) Osmosis is one of the process that takes across the cell membrane. It usually involves with the movement of water molecules from the region of their high concentration to the region of their low concentration. Design an experiment to determine the osmosis. [2]
c) Dorji' with a genotype *Tt* for tall height is married with a woman whose genotype for height is *Tt*. If they wish to have offspring,
i. How many children will be tall in height? [1]
ii. What proportion of children will be short in height? [1]
iii. Mention genotypes for tall and short height. [1]

d) If a robot responds to stimuli automatically, which part of the central nervous system does it function alike? Why? [2]
e) A person diagnosed with kidney failure is usually characterized by swelling in his/her legs or the entire body. How would you relate the swelling of legs to the kidney failure? [2]

Question 9

a) Mention one use fungi in our daily lives? [1]
b) If you take one nerve cell from and skin cell from your body, would they have same genetic composition? Why? [2]
c) How are two alleles received from parents expressed? Explain. [2]
d) The emergence of male silent crickets is one of the examples of recent evolution. The male silent crickets can now hide from their predators. Provide an explanation on the evolution of silent crickets from the population of a singing crickets [2].
e) Lamarkism says that the organism evolves as result of new needs and the desire. What is your opinion against his idea of evolution? Explain with examples. [3]

BCSE Biology Paper I Blue print (section A)
70 Marks

sl no	Disciplinary Core Ideas	Weighting out of 100	Weighting out of 110	Weighting out of 70	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total Marks
1. Molecules to Organism: Structures and Processes											
1.1	**Within prokaryotic cells**				Q1A. viii(1)	Q1A. xx(1)					2
1.2	**In and out of the cell**						Q1A. xiii(1)	Q1D. v(1)			2
1.3	**Photosynthesis**						Q1C. ii(1)	Q1A. iii (1)	Q1A.xix(1)		3
1.4	**Transportation system in plants**					Q1C. i(1)		Q1A. xvi(1)			2
1.5	**Digestion in the human body**						Q1A. i(1) Q1B. iii(1)	Q1A. xii(1)			3
1.6	**Transport and exachange in our body**					Q1A. xiv(1)	Q1C. v(1)	Q1D. i(1)	Q1A. ix(1)		4
1.7	**Response and Coordination**						Q1A. xxiii(1)	Q1D. ii(1)		Q1A. xviii(1)	3
1.8	**Discharging of Waste in human body**					Q1B. ii(1)		Q1A. ii (1)			2
2. Ecosystems: Interactions, Energies, and Dynamics											
2.1	**Organims and its environment**				Q1B. iv(1)		Q1A. ix(1)	Q1A. v (1)	Q1A. xxi(1)		4
2.2	**Micro-organism, Diseases and drugs**								Q1A. xxv(1)		1
3. Heridity: Inheritance and Variation of Traits											
3.1	**Growth, Developmnt, and Reproduction**				Q1B. v(1)	Q1A. iv(1)	Q1A. xvii(1)	Q1C. iv(1)			4
3.2	**Inheritance and Variation of Traits**					Q1A. xi(1)	Q1D. iii(1)	Q1A. xv(1)		Q1C. iii(1)	4
4. Biological Evolution: Unity and Diversity											
4.1	**Genetic basis of natural selection**							Q1A. vi (1)	Q1D. iv(1)		2
4.2	**Factors responsible for speciation**						Q1A. xxiv(1)		Q1A. xii (1)		2
4.3	**Artificial selection**						Q1A. vii(1)	Q1B. i(1)			2
Total					3	6	11	13	5	2	40

BCSE Biology Paper I Blue print (section A)
70 Marks

sl no	Disciplinary Core Ideas	Weighting out of 100	Weighting out of 110	Weighting out of 70	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total Marks
1. Molecules to Organism: Structures and Processes											
1.1	**Within prokaryotic cells**				Q6b(1)			Q3a. (2)			3
1.2	**In and out of the cell**					Q8b (2)	Q5b.(2)				4
1.3	**Photosynthesis**					Q2D. iii(1)	Q7b(2)	Q4a (1)		Q2d. i(1) Q2D. ii(1)	6
1.4	**Transportation system in plants**						Q7e(2)			Q4b(3)	5
1.5	**Digestion in the human body**				Q4c.i(1) Q8a (1)		Q2a. (2)	Q4c. ii(2)			6
1.6	**Transport and exachange in our body**					Q5c. (3) Q7d(1)			Q6a (2)		6
1.7	**Response and Coordination**						Q7c (2)	Q5a(2)			4
1.8	**Discharging of Waste in human body**				Q3d. i(1)		Q8e(2)	Q3d. ii(2)			5
2. Ecosystems: Interactions, Energies, and Dynamics											
2.1	**Organims and its environment**						Q3c. (2)	Q2b (2) Q3b. (1)	Q6e(2)	Q3e. i(2)	9
2.2	**Micro-organism, Diseases and drugs**					Q9a(1)	Q5d(3)				4
3. Heridity: Inheritance and Variation of Traits											
3.1	**Growth, Developmnt, and Reproduction**						Q9b(2)	Q6c.(2)	Q6d.i(1) Q6d. ii(2)		7
3.2	**Inheritance and Variation of Traits**				Q2f(1)	Q7a. (2)		Q8c (3) Q9c (2)			8
4. Biological Evolution: Unity and Diversity											
4.1	**Genetic basis of natural selection**						Q9d (2)				2
4.2	**Factors responsible for speciation**					Q4d (1)		Q9e(3)	Q4e(2)		6
4.3	**Artificial selection**								Q2c (3)		5
Total					5	11	23	22	12	7	80

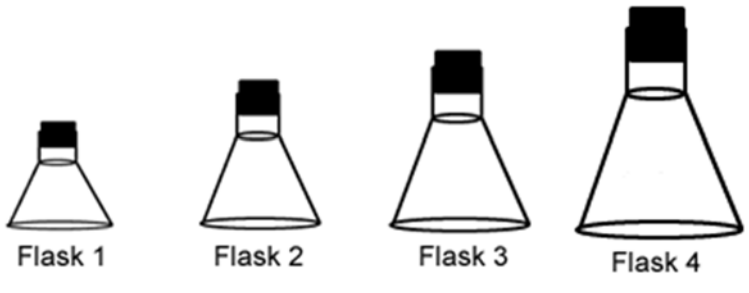
CHEMISTRY

Section A (40 marks)
Attempt all questions

Question 1

(a) Complete the following statements by selecting the correct alternative from the choices given.[25 marks]

(i)Each of the following flasks contains the same number of gaseous molecules.



The flask with the highest pressure is:

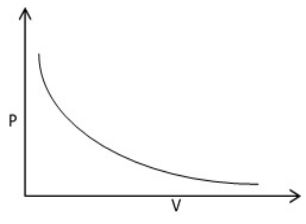
[A] Flask 1.

[B] Flask 2.

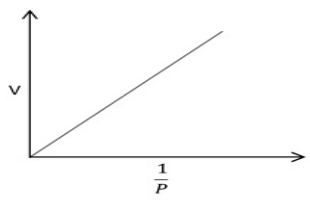
[C] Flask 3.

[D] Flask 4.

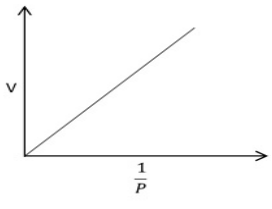
(ii)The following graphs represent Boyle's law **EXCEPT**



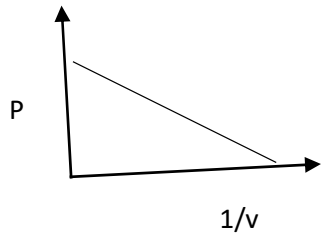
Graph 1



Graph 2



Graph 3



Graph 4

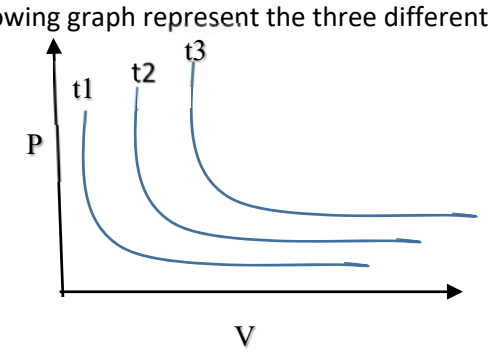
[A] Graph 1.

[B] Graph 2.

[C] Graph 3.

[D] Graph 4.

(iii) The following graph represent the three different plots at different temperatures for Boyle's law.



The correct sequence of temperature is

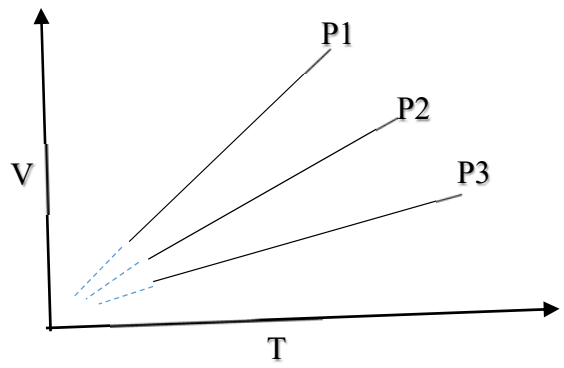
[A] t1 > t2 > t3.

[B] t3 > t2 > t1.

[C] t2 > t3 > t1.

[D] t1 > t3 > t2.

(iv) The following graph represents three different plots for Charles' law.



The correct sequence for the pressure is

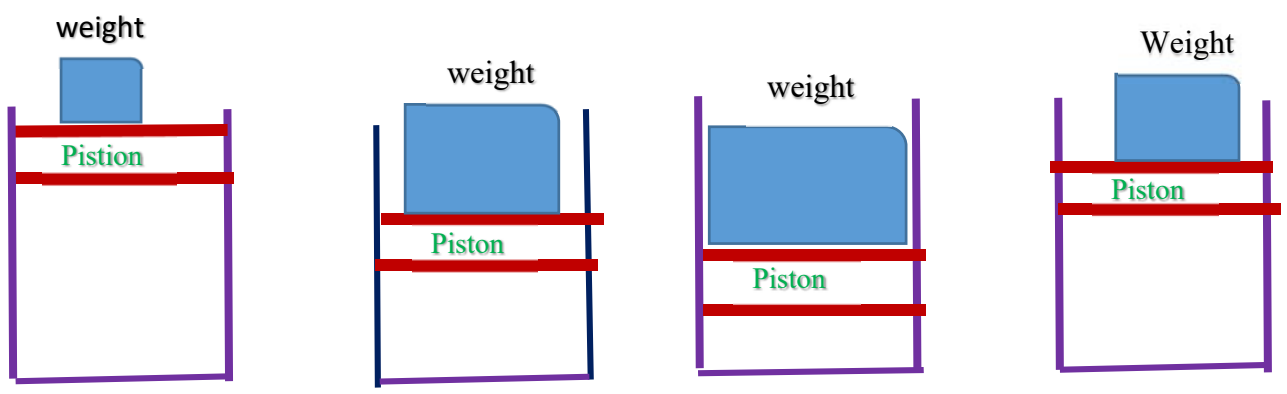
[A] P1 > P2 > P3.

[B] P3 > P2 > P1.

[C] P2 > P3 > P1.

[D] P1 > P3 > P2.

(v) The following figures represent cylinder piston arrangement in which a gas of given mass is present and the piston is free to slide in the cylinder. The system is placed at room temperature and initially P_1, V_1 be the pressure and volume of the gas. Now start changing the weight gradually on the upper part of piston.



1 2 3 4

P_1 = 2 Bar P_2= 4 Bar P_3= 5 Bar P_4= 2.5 Bar

V_1= 10 L V_2=? V_3= 4 L V_4= 8 L

The volume (V_2) in cylinder 2 is

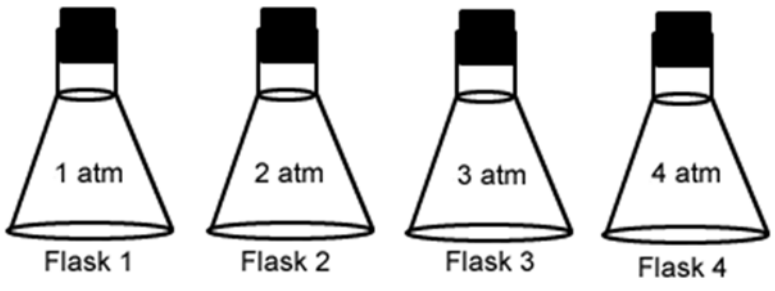
[A] 2 L.

[B] 3L.

[C] 4 L.

[D] 5 L.

(vi) Each of the following flasks is of the same size and kept under same temperature.



The flask that contains the maximum number of gaseous molecules is

[A] Flask 1.

[B] Flask 2.

[C] Flask 3.

[D] Flask 4.

(vii) If the pressure of a certain amount of gas is reduced to 1/4th of its initial pressure at a fixed temperature, then its final volume would be increased by

[A] 2 times.

[B] 3times.

[C] 4 times.

[D] 5 times .

(viii) Your family is travelling from Thimphu to Trashigang by a car. The tyre of the car contains air at 1.25×10^5 Pa when at a temperature of 27°C. Once the car has been running for a while, the temperature of the air in the tyre rises to 42°C. If the volume of the tyre does not change, the new pressure of the air in the tyre is

[A] 1.31 × 105 Pa.

[B] 1.31 × 106 Pa.

[C] 1.31 × 107 Pa.

[D] 1.31 × 108 Pa.

(ix) If the Avogadro number is N ,the number of atoms in 2 moles of CO_2 gas is

[A] N.

[B] 2N.

[C] 3N.

[D] 4N.

(x) A balloon seller in Thimphu filled a balloon with 2 L air when the temperature was 23.4° C. He sold the balloon at the time when temperature was recorded to 26.1°C. The volume of the balloon at this temperature is

[A] 1.02 L.

[B] 2.03 L.

[C] 3.04 L.

[D] 4.05 L.

(xi) For an ideal gas number of moles per litre in terms of its pressure P, gas constant R and temperature T is

[A] PT/R.

[B] PRT.

[C] P/RT.

[D RT/P.

(xii) If two moles of an ideal gas at 546 K occupy a volume of 44.8 litres, the pressure must be

[A] 1 atm.

[A] 2 atm.

[A] 3 atm.

[A] 4 atm.

(xiii) Alcohol is used in hand sanitizer because it has

[A] antimicrobial property.

[B] antibiotic property.

[C] oxidising property.

[D] reducing property.

(xiv) The traffic police uses breath analyser to prevent drunk driving. In the breath analyser, alcohol is

[A] antiseptic agent.

[B] oxidising agent.

[C] reducing agent.

[D] dehydrating agent.

(xv) The table below shows the density of four different metals.

Metal	Density (g/cm^3)
Aluminium	2.70
Lead	11.36
Copper	8.96
Iron	7.87

If you have to choose a metal based on its density to make a beverage can , the most suitable metal would be

[A] aluminium.

[B] copper.

[C] iron.

[D] lead.

(xvi) The flow chart below shows the sequence of steps involved in extraction of a metal from its ores.

(I) Refining of metal ⟶ reduction of metal oxide ⟶ purification of ores ⟶ concentration of ores

(II) purification of ores ⟶ reduction of metal oxide ⟶ refining of metal ⟶ concentration of ores

(III) Concentration of ores ⟶ purification of ores ⟶ reduction of metal oxide ⟶ refining of metal

(IV) Reduction of metal oxide ⟶ refining of metal ⟶ purification of ores ⟶ concentration of ores

The correct step in metal extraction is

[A] (i)

[B] (ii)

[C] (iii)

[D] (iv)

(xvii) Chlorine is used in water treatment plant and swimming pool. The main advantage of adding chlorine to water is to

[A] disinfect the water.

[B] improve the taste of water.

[C] decrease the density of water.

[D] remove algae from water.

(xviii) Use of a standard toothpaste prevents tooth decay. The following are the formulation for preparation of a toothpaste with one important chemical component missing in the formulation.

Abrasives, Flavours, Humectants, Detergents

The missing chemical component is

[A] fluoride.

[B] iodide.

[C] bromide.

[D] chloride.

(xix)The graph below shows the electronegativity trend of halogens.

The halogen which attracts the electron most in a covalent bond is

[A] Bromine.

[B] chlorine.

[C] fluorine.

[D] iodine.

(xx) The element which is most likely to be a catalyst in the catalytic converter of a car exhaust is

[A] aluminium.

[B] lithium.

[C] platinum.

[D] mercury.

(xxi) The following backers contain the solution of four different elements A, B, C, and D (not their real symbol). They were then tested for their catalytic activity with hydrogen peroxide to see if oxygen gas was evolved.

A B C D

Based on the observation, the element most likely to be a transition metal is

[A] compound of element A, lots of bubbles observed.

[B] compound of element B, a few bubbles observed.

[C] compound of element C, a very few bubbles observed.

[D] compound of element D, no bubbles observed.

(xxii) The table below represents the mole and the Avogadro's number.

	One mole of substance contains	One of substance is equal to
i	The substance relative atomic or molecular mass in grams	6.02×10^{23} atoms, molecules or formula units
ii	The substances atomic number in grams	12.02×10^{23} atoms, molecules or formula units
iii	The substances relative atomic or molecular mass in grams	6.02×10^{22} atoms, molecules or formula units

iv	The substance atomic number in grams	12.02 x 10^{22} atoms, molecules or formula units

The row that correctly describes the mole and the Avogadro's constant is

[A] i.

[B] ii.

[C] iii.

[D] iv.

(xxiii) The table below represent four different reactions with their entropy values.

	Reaction	ΔS (JK^{-1})
i	$2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$	-187.95
ii	$NH_4Cl(s) \rightarrow NH_3(g) + HCl(g)$	284.55
iii	$2C(s) + O2(g) \rightarrow 2CO_2(g)$	2.96
iv	$H_2O(l) \rightarrow H_2O(g)$	1.30

The reaction with maximum disorder is

[A] i.

[B]ii.

[C] iii.

[D] iv.

(xxiv)Karma thermally decomposed 24.8 g of copper carbonate and obtained 11.2 g of copper (II) oxide and carbondioxide.The reaction is represented by the following equation.

$CuCO_3 \longrightarrow CuO + CO_2$

The percentage yield of carbon dioxide is

[A] 45%

[B] 50%

[C] 55%

[D] 60%

(xxv) Karma mixed 200mL of 0.1 M NaOH with 100mL of 0.1M H_2SO_4 in experiment 1. In experiment 2, 100mL of 0.1M NaOH was mixed with 50mL of 0.1 M H_2SO_4. The correct statement is

[A] heat of neutralisation in both the experiment are same.
[B] heat of neutralisation in experiment 1 is more than that of experiment 2.
[C] temperature rise in reaction 1 and 2 are equal.
[D] temperature rise in reaction 2 is more than that of reaction 2.

(b) Match the following [5 marks]

Column A	Column B
(i)explains volume temperature relationship	slag
(ii)Produces fruity smelling compound with organic acid	Acetic acid
(iii)Impurities in ores	chlorine
(iv)Element important for human teeth	Boyle's Law
(v)These metals are hard and tough	alcohol
	gangue
	Charles' Law
	fluorine
	Transition elements
	Alkali metals

(c) Fill in the blanks.[5 marks]

i. According to Boyle's law, mathematically PV = constant. If the pressure of a gas is 2atm when the value of constant is 40, the value of volume would be …… when the pressure is increased to 4atm.

ii. K5, Bhutan Highland and Special Courier are three different brands of whisky in Bhutan. The alcohol found in these whisky is ……

iii. A student analysed a common salt and found that one of the halogens required for normal metabolic function of human body. The halogen that could be missing in the salt is ……

iv. The formula of water is H_2O, The percentage composition of hydrogen in water is ……

v. Sonam kept some water in the fridge and found that the water turned into ice the next day. This process involves the ……in entropy.

(d) Write True or False. [5 marks]

(i) The number of moles of a gas is equal to the mass divided by the molar mass.
(ii) ΔH is negative for exothermic reaction.
(iii) The functional group in alcohol is –COOH which gives the characteristic reaction of alcohols.
(iv) The halogens in a period shows steady increase down the group.
(v) Transition metals are used as construction materials due to its malleability and ductility**.**

Section B (60marks)

Answer any six questions from this section

Question 2

(a) Sonam conducted an experiment in the laboratory to verify Boyle's law for a certain gas. After performing the experiment, Sonam obtained the following set of data.

Table. Pressure and volume experimental data

Pressure (atm)	0.9	1.2	1.3	1.5	1.8	1.9	2.1
Volume (cm^3)	24.9	18.6	17.1	15.0	12.1	11.5	10.2

Based on the data, answer the following questions.

(i) Find whether the gas obeys Boyle's law by plotting graph of pressure vs volume and pressure vs inverse volume. [2]
(ii) What conclusion can you draw from the experiment? [1]
(iii) Identify different variables in the experiment.[1]
(iv) Explain Boyle's law with its equation. [1]
(v) Is Boyle's law universally true? If not mention one of its limitations.[1]
(vi) Give two real life examples of Boyle's law.[1]

(b) Solve the following numerical based on Boyle's law.

(i) An astronaut releases a compressed gas into the space during the space mission. The initial volume of the gas is 10 L. what would be the final volume?[1]

(ii) A balloon is transported from Phuentsholing to Thimphu. The volume and the pressure of the balloon in Phuentsholing is 2.0 L and 1atm . Assuming the temperature to be constant, find the volume of balloon in Thimphu if the pressure at Thimphu is 0.90 atm.[2]

Question 3

(a) A student designs an experiment to investigate the property of ethyl alcohol using acetic acid and conc. H_2SO_4.

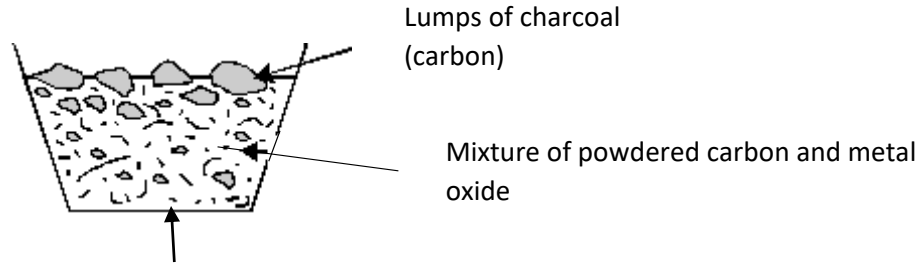
(i)Write the procedure to conduct the investigation.[2]
(ii) What are the reactants and the products in the reaction?[1]
(iiiWrite the chemical equation for the reaction.[1]
(iv)What is your observation in the experiment. [1]

(b) We often hear accidents due to drunken driving. For public safety, police officers use Breathalyser to test the level of alcohol in drivers.

(i) What is the principle used in Breathalyser?[2]
(ii) Drinking too much of alcohol leads to change in mood, behaviour, and loss of coordination while moving. Which part of the body is affected by alcohol here?[1]
(iii)How is ethyl alcohol manufactured in industries? Write the equation. [1]
(iv)What is denatured alcohol?[1]

Questions 4

A student was trying to extract metal from its oxide ore. The student heated the oxide as shown in the figure.



Strong heat

With reference to the extraction of metal, answer the following questions.

(i)What happens to the oxide ore when heated with powdered carbon?[1/2]

(ii) What name is given to this chemical reaction?[1/2]

(iii)Complete the word reaction between metal oxide and carbon.[1]

Metal oxide + C ⟶ …… + ……

(iv)Bauxite is the ore of aluminium. What is an ore?[1]

(v)Mention two reasons for choosing aluminium over other metals to make cans for beverage drinks. [2]

(b) The table below shows the information on halogens.

Table. Properties of halogen

Atomic number	Element	Symbol	Electronic configuration	Electronegative value
9	Fluorine	F		4
17		Cl		3
35		Br	2,8,18,7	2.8
53		I	2,8,18,8,7	2.5

Refer the table and answer the following questions.

(i)Complete the table. [2]

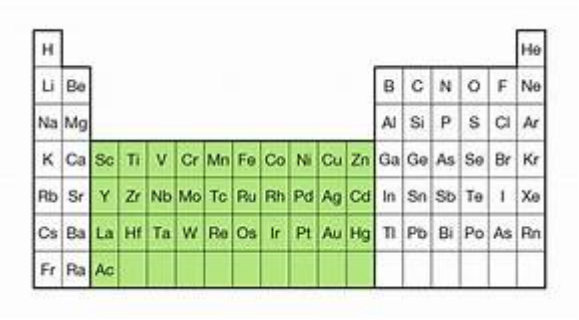
(ii) How many electrons are present in the valence shell of halogens? [1]

(iii) What type of bond is formed between metals and halogens? [1]

(iv)Why does electronegativity value decrease down the group? [1]

Question 5

(a)The figure below shows the periodic table highlighting transition elements.



With reference to the periodic table, answer the questions that follow.

(i)Why d-block elements are called transition elements? [1]

(ii)Write two properties of transition elements. [1]

(iii)Hydrated copper sulphate is transition metal compound which is blue. Why do transition elements form coloured compounds? [1]

(iv) What are the metallic characters of transition elements? [1]

(v)What are transition elements often used for in industry? [1]

(b) A student designed an experiment to investigate the number of particles in a given sample of table salt. To calculate the number of particles, he uses the Avogadro's number.

Answer the questions that follow.

(i)Mention briefly the procedure of your experimental design. [2]

(ii) If the students finds the weight of the sodium chloride to be 28.5g, calculate the number of particles. [Na=23, Cl= 35.5] [2]

(iii)What is Avogadro's number? [1]

Questions 6

(a) Stoichiometry is present in daily life to help us determine the amount of substance. The following questions are with reference to stoichiometry.

(i)Penicillin, the first of a now large number of antibiotics (antibacterial agents), was discovered accidentally by the Scottish bacteriologist Alexander Fleming in 1928, but he was never able to isolate it as a pure compound. This and similar antibiotics have saved millions of lives that might have been lost to infections. Penicillin has the formula $C_{14}H_{20}N_2SO_4$. Compute the mass percent of each element. [C= 12,H=1, N=14 S=32 O=16] [2]

(ii) Caffeine, a stimulant found in coffee, tea, and chocolate, contains 49.48% carbon, 5.15% hydrogen, 28.87% nitrogen, and 16.49% oxygen by mass and has a molar mass of 194.2 g/mol. Determine the molecular formula of caffeine.[C= 12, H=1 ,N=14, S= 32, O=16] [3]

(iii) Lithium hydroxide is used in space vehicles to remove exhaled carbon dioxide from the living environment by forming solid lithium carbonate and liquid water.

$2LiOH + CO_2 \longrightarrow Li_2CO_3 + 3H_2O$

What mass of gaseous carbon dioxide can be absorbed by 1.00 kg of lithium hydroxide? [Li=6, H= 1 ,C=12] [3]

(b) The following questions refer to the mole and molar volume. Answer the questions.

(i) Define molar volume [1/2]

(ii) Karma has 5.6 X 10^{24} atoms of helium gas to fill balloons at a ball game. If each balloon holds 1.5 litres of helium, how many balloons can he fill? Assume STP. [1 ½]

Question 7

(a) The following questions refer to enthalpy and entropy. Answer the questions that follow.

(i)H_2 and O_2 react to produce water according to the following equation.

$2H_2(g) + O_2(g) \longrightarrow 2H_2O\ (l)$. Will the entropy increase or decrease in the reaction? Give reasons.[1 ½]

(ii) What is entropy? [1/2]

(iii)The combustion of one mole of methane, CH_4, releases 890KJ/mole of heat according to the following equation.

$CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O \qquad \Delta H = -890.4\ kJ$

The enthalpy,ΔH, for the reaction is -890.4kJ.

What does negative ΔH indicate? [1/2]

(iv) Calculate the energy given off when 2 moles of CH_4 is burned.[2]

(v) Define enthalpy. [1/2]

(b) A laboratory assistant demonstrates the oxidation reaction by burning a magnesium ribbon in oxygen and obtains the following data.

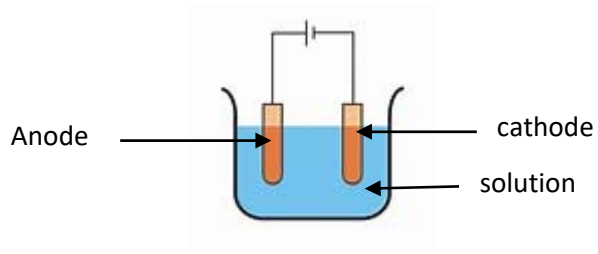
Reactants		Products
Magnesium + Oxygen	⟶	Magnesium Oxide
48.6g	?	80.6g

(i)Assuming that magnesium is completely burned, predict the amount of oxygen used to produce 80.6g of magnesium oxide.[1]

(ii) What scientific law does this experiment support? Explain.[1]

(iii)Define the term internal energy. [1/2]

(c) The figure below shows the refining of copper by electrolysis.



Refer the figure to answer the questions.

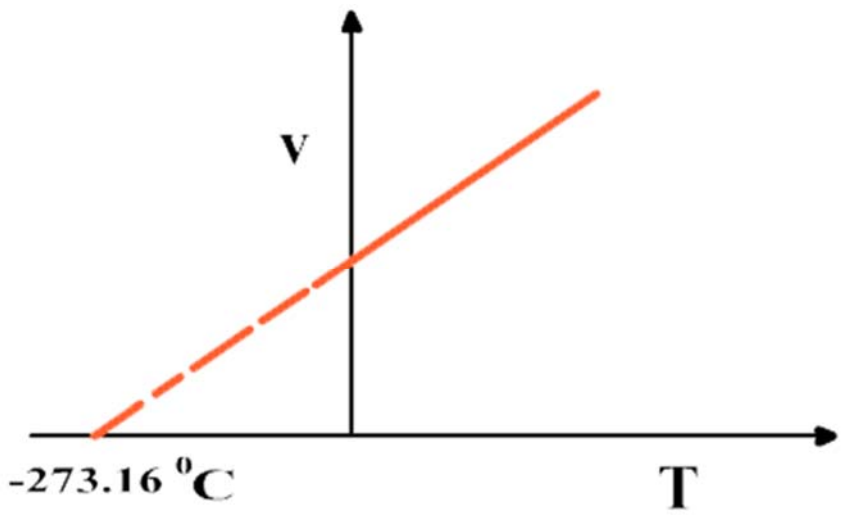
(i)Identify impure copper and pure copper as two different electrodes.[1]

(ii)What ion should the solution contain? [1]

(iii) Define electro refining. [1/2]

Question 8

(a) A student conducted an experiment on a certain gas to find the relationship between temperature (T) and the volume(V). Using the data obtained, a graph was obtained as shown in the figure below.



Use the figure to answer the following questions.

(i)Which gas law does the plot verify?[1]

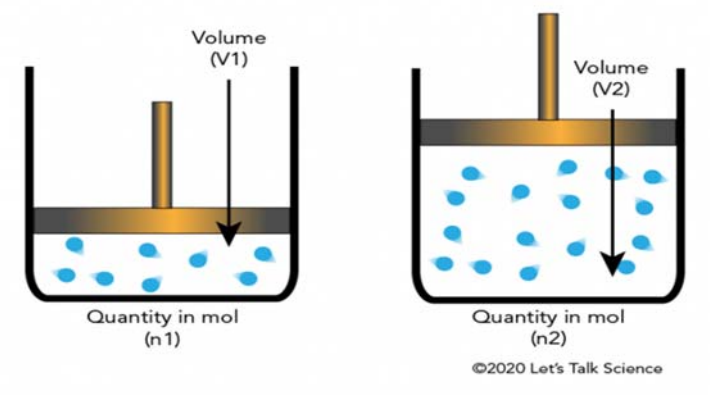
(ii)Define the law. [1]

(iii) Identify variables in the plot.[1]

(iv) Does the volume of the gas reduce to half the original volume, if the temperature is reduced from 100 degree celsius to 50 degree celsius? Give reason.[1]

(v) A balloon filled with helium gas at 22^{o}C and 760 mm Hg. It is then placed outside on a hot summer day when the temperature is 31^{0}C. If the pressure remains constant, what will be the volume of balloon? [2]

(b) The figure below demonstrates the behaviour of a certain gas



Study the figure and answer the following questions.

(i) Which gas law does the figure demonstrate? [1]

(ii)Define the law based on the figure. [1]

(iii) Sonam was driving his car from Thimphu to Phuentsholing. The tyre of his car containing 10 moles of air and occupying a volume of 40L loses half its volume due to a puncture on the way. Considering that the pressure and temperature remain constant, what would be the amount of air in the deflated tyre?[2]

Question 9

(a)Airbag in a car can save life if there is head-on collision between two cars. Air bag uses sodium azide,NaN_3, which produces nitrogen gas during the collision according to the following equations.

$2NaN_3 \longrightarrow 3N_2 + 2Na$

(i)Calculate the amount of sodium azide to produce 67 litres of nitrogen that can fully inflate the normal airbag.[Na= 23, N=14] [2]

(ii)Calculate the pressure exerted in the airbag by 67 litres of nitrogen. [2]

(b)You are provided with aqueous solution of sodium iodide and bromine water along with the supply of test tubes.

(i)Write the steps to demonstrate the displacement reaction of halogens.[2]

(ii)Write a balanced equation for the reaction between sodium iodide and bromine water.[1]

(iii)What conclusion can you draw from the reaction.[1]

(c)Iron is a transition element.

(i)State two characteristic features of the chemistry of iron and its compound. [1]

(ii)Why are transition elements generally used as catalyst? [1]

BLUEPRINT FOR BCSE CHEMISTRY-SECTION A

Levels → / Topics ↓	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total Marks
1. Gas Laws	**1(a)(xi)[1]**		**1(a)(ii)[1],1(a)(v)[1], 1(a)(vii)[1],1(a)(viii)[1], 1(a)(x)[1],1(a)(xii)[1],1(c)(i)[1]**	**1(a((i)[1],1(a)(iii)[1], 1(a)(iv)[1],1(a)(vi)[1], 1(b)(i)[1]**			
2. Alcohol		**1(c)(ii)[1],1(d)(iii)[1]**	**1(a)(xiv)[1]**	**1(a)(xiii)[1],1(b)(ii)[1]**			
3. Metallurgy	**1(a)(xvi)[1]**			**1(a)(xv)[1],1(b)(iii)[1]**			
4. Periodic Table (Halogens)	**1(a)(xviii)[1]**	**1(a)(xvii)[1],1(c)(iii)[1],1(d)(iv)[1]**		**1(a)(xix)[1],1(b)(iv)[1]**			
5. Transition Elements		**1(a)(xx)[1],1(d)(v)[1]**		**1(a)(xxi)[1],1(b)(v)[1]**			
6. Chemical Reactions, Conservation of mass, Mole Concept and Stoichiometry	1(a)(xxii)[1], 1(d)(i)[1]		**1(a)(ix)[1],1(a)(xxiv)[1],1(c)(iv)[1]**				
7. Energy Transfer in Chemical Reactions	**1(d)(ii)[1]**	**1(c)(v)[1]**	**1(a)(xxv)[1]**	**1(a)(xxiii)[1]**			
Total	**6**	**8**	**12**	**14**			**40**

BLUEPRINT FOR BCSE CHEMISTRY-SECTION B

Levels → / Topics ↓	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total Marks
1. Gas Laws	**8(a)(ii)[1]**	**2(a)(iv)[1],2(a)(vi)[1],8(a)(i)[1],8(b)(i)[1],8(b)(ii)[1]**	**2(a)(i)[2],2(a)(ii)[1],2(b)(i)[1],2(b)(ii)[2],8(a)(v)[2],8(b)(iii)[2],9(a)(ii)[2]**	**2(a)(iii)[1],2(a)(v)[1],8(a)(iii)[1],8(a)(iv)[1]**			**22**
2. Alcohol	**3(a)(i)[2], 3(a)(ii)[1], 3(b)(iv)[1]**	**3(a)(iv)[1],3(b)(i)[2],3(b)(iii)[1]**	**3(a)(iii)[1]**	**3(b)(ii)[1]**			**10**
3. Metallurgy	**4(a)(ii)[½], 7(c)(iii)[½]**	**4(a)(i)[½], 4(a)(iv)[1],7(c)(i)[1], 7(c)(ii)[1]**	**4(a)(iii)[1]**	**4(a)(v)[2]**			**7½**
4. Periodic Table (Halogens)	**9(b)(i)[2]**		**4(b)(i)[2],4(b)(ii)[1],9(b)(iii)[1]**	**4(b)(iii)[1],4(b)(iv)[1]**			**8**
5. Transition Elements	**5(a)(v)[1]**	**5(a)(ii)[1],5(a)(iv)[1],9(c)(i)[1]**	**9(b)(ii)[1]**	**5(a)(i)[1],5(a)(iii)[1],9(c)(ii)[1]**			**8**
6. Chemical Reactions, Conservation of mass, Mole Concept and Stoichiometry	**5(b)(iii)[1], 6(b)(i)[½], 7(a)(ii)[½],7(a)(iii)[½]**	**5(b)(i)[2]**	**5(b)(ii)[2],6(a)(i)[2],6(a)(ii)[3],6(a)(iii)[3], 6(b)(ii)[1½],7(b)(i)[1],9(a)(i)[2]**				**19**
7. Energy Transfer in Chemical Reactions	**7(a)(v)[½],7(b)(iii)[½]**	**7(b)(ii)[1]**	**7(a)(iv)[2]**	**7(a)(i)[1½]**			**5½**
Total	**12½**	**18½**	**35½**	**13½**			**80**

PHYSICS

SECTION A [40 MARKS]
ANSWER ALL QUESTIONS

Question 1

a) **Directions: For each question, there are four alternatives A, B, C and D. Choose the correct alternative and circle it. Do not circle more than ONE alternative. If there are more than one circled, NO score will be awarded.** **[25]**

i. Center of gravity of a rectangle will be at its:
A. Centre.
B. At its periphery.
C. Intersection of its diagonal.
D. At the corners.

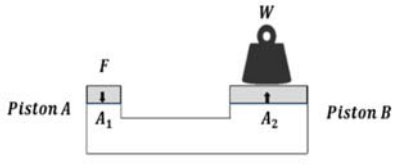
ii. What is the number of neutrons in this isotope of uranium?
$^{238}_{92}U$
A. 92
B. 119
C. 146
D. 238

iii. What makes the space shuttle different from conventional rockets?
A. It used a big orange external fuel tank.
B. It could land on the ground instead of splashing down in the ocean.
C. It is the first true space plane.
D. It is the re-usable operational spacecraft.

iv. A 50 kg bear climbed on the tree branch 10 meters above the ground. If the bear descends to 5 meters above the ground, its potential energy will be decreased by
A. 4900 J
B. 2450 J
C. 2540 J
D. 2500 J

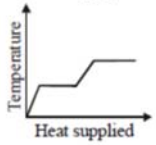
v. A boat floating in a tank is carrying passengers. If the passengers drink water, the water level of the tank
A. rises.
B. falls.
C. remains unchanged.
D. will depend on the atmospheric pressure.

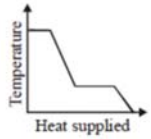
vi. Which comparison is true based on the hydraulic pump shown below?

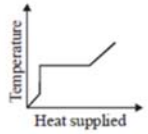


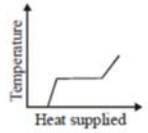
A. The pressure on piston A is smaller than the pressure on piston B.
B. The force F is the same as the weight of the load.
C. The force F is greater than the weight of the load.
D. The pressure on piston A is the same as the pressure on piston B.

vii. A block of ice at -10^{0}C is slowly heated and converted to steam at 100 ^{0}C. Which on the following curves represents the phenomenon qualitatively?

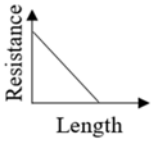
A. 

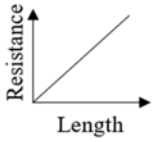
B. 

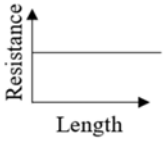
C. 

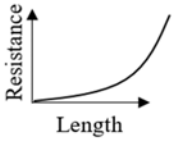
D. 

viii. At a constant temperature, for a copper wire of uniform cross-sectional area, the relationship between the resistance and its length can be best represented by the graph

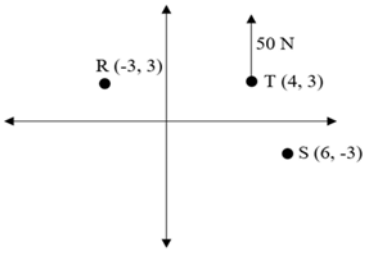
A. 

B. 

C. 

D. 

ix. Determine the moment about the point T. Take the coordinate distance in meter.



A. 0Nm
B. 350Nm
C. 100Nm
D. 200Nm

x. The strength of magnetic field around a current carrying conductor is
A. inversely proportional to the current but directly proportional to the square of the distance from wire.
B. directly proportional to the current and inversely proportional to the distance from wire.
C. directly proportional to the distance and inversely proportional to the current
D. directly proportional to the current but inversely proportional the square of the distance from wire.

xi. A sport person applies sun safe cream while playing in the sun. This is done to protect himself from the harmful effects of
A. radio waves.
B. microwaves.
C. infrared radiation.
D. ultraviolet radiation.

xii. Karma is a student studying in a boarding school. He wants to call his parents using warden's mobile phone since he is in need of some money to buy stationaries. Which of the following electromagnetic wave is used in mobile phones to transfer information?
A. Radio waves.
B. Microwaves.
C. Infrared radiation.
D. Gamma rays.

xiii. The nuclide notation for a generic element is given by the symbol. Which of the following is the correct definition of each of the term?

	X	**A**	**Z**
A	element	Nucleon number	Proton number
B	Electron number	element	Nucleon number
C	element	Nucleon number	Electron number
D	Neutron number	element	Proton number

xiv. In a car lift, compressed air exerts a force F_1 on a small piston having a radius of 5 cm. This pressure is transmitted to the second piston of a radius of 15 cm. If the mass of the car to be lifted is 1350 kg. What is F_1?
A. 14.7×10^3 N
B. 2.47×10^3 N
C. 1.47×10^3 N
D. 24.7×10^3 N

xv. A sky driver uses a parachute. When does the parachute reach terminal velocity?

A. When the resultant force is negative.
B. When the resultant force is positive.
C. When the resultant force is zero.
D. When the body starts falling.

xvi. The velocity of ball at highest point when it is thrown vertically upward is
A. $-10\ ms^{-2}$
B. $10\ ms^{-2}$
C. maximum.
D. zero.

xvii. After the generation of electricity at a power station, electrical voltage is increased significantly for transportation across the country via the national grid. What is the advantage of transmitting electricity at very high voltages?
A. It makes the electricity flow more quickly.
B. It increases the efficiency of the electricity transfer.
C. It produces more power.
D. It is safer to transmit electricity at high voltage.

xviii. You have a 12 Volt battery and placed across a 6 ohm resistor, what will the current be?
A. 0.5 A
B. 6 A
C. 2 A
D. 18 A

xix. A person is holding a bucket by applying a force of 10 N. He moves a horizontal distance of 5m and then climbs up a vertical distance of 10m. Find the total work done by him?
A. 50J
B. 140J
C. 250J
D. 100J

xx. How pressure is related with thrust and the surface area?
A. Pressure is directly proportional to thrust and inversely proportional to the surface area.
B. Pressure is inversely proportional to thrust and directly proportional to the surface area.
C. Pressure is equal to the product of thrust and the surface area.
D. Pressure is equal to the sum of thrust and the surface area.

xxi. Although radio wave has the longest wavelength, microwave is used to send signals to satellite this is because radio wave
A. cannot penetrate the ionosphere.
B. cannot be detected by satellite.
C. cannot carry the signal.
D. signal gets attenuated easily.

xxii. A rover is a space exploration device designed to
A. stay on the orbit of earth to observe the universe
B. fly around the unknown planet to collect information
C. move on the solid surface of the planet to collect information
D. explore the existence of varieties of life in the sea of the unknown planet

xxiii. A light wave of frequency ranging between $3x10^{13}$ Hz to $3x10^{14}$ Hz is used in television remote. The wave used is
A. X-rays
B. Gama rays
C. Ultraviolet rays
D. Infrared rays

xxiv. The figure represents 3 different objects of different mass placed at equal height in vacuum. Which object will hit the ground first, if all of them are released at the same time?

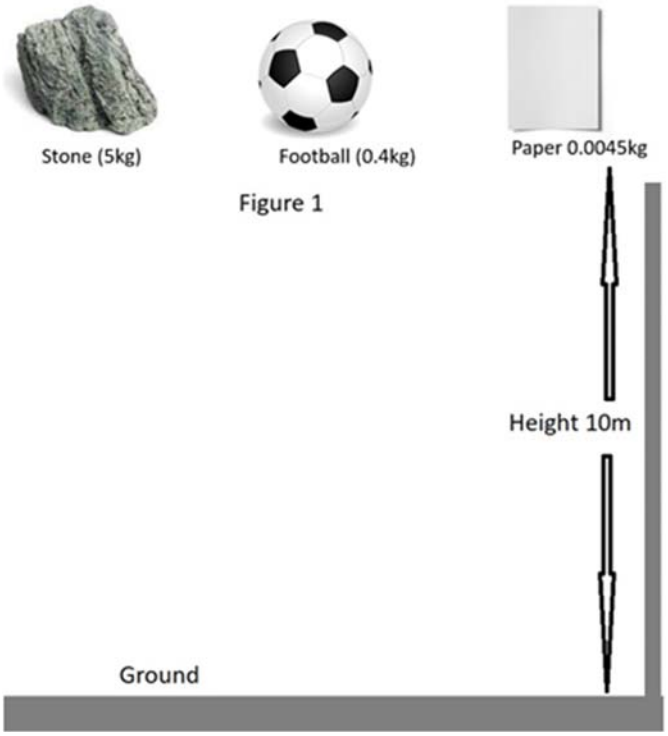


Figure 1

A. Stone will hit the ground first.
B. Football will hit the ground first.
C. Paper will hit the ground first.
D. All the objects will hit the ground at the same time.

xxv. Dawa pushes a block with the force of 50N while Pema pulls the same block with the force of 70N as shown in the figure. Calculate the net force experienced by the block.

A. 120N in the direction of their force applied.
B. 120N in the opposite direction of their force applied.
C. 20N in the direction of their force applied.
D. 20N in the opposite direction of their force applied.

b) Fill in the blanks by writing suitable words. **[5]**

i. The catastrophic explosion caused when the stars collapse under their own gravity is called ……..……..

ii. The waves of ……wavelengths cause greater harm when our body is exposed to it.

iii. Copper is chosen to construct a calorimeter as it has low ……. so that it takes only negligible heat from the system.

iv. The one who does a large amount of work in a short time is said to possess ……amount of power.

v. Kuzu FM uses a wave of frequency 88 to 105 Megahertz to broadcast its radio program. They modify their signal to match that of the carrier wave using …… modulation.

c) Write whether the following statement is TRUE or FALSE **[5]**

i. Stability of a body will increase if we reduce the position of center of gravity and area of base of support.

ii. It is always easier to open the door from the farthest distance from the hinges. The moment of force will increase by two times if we double the distance of the point of application of force.

iii. When two bodies are at thermal equilibrium, there will be no flow of heat between them.

iv. In a step-up transformer, the primary coil is made thicker compared to the secondary coil.

v. Radioactivity has a wide range of applications. However, they are also hazardous if not handled carefully. Alpha radiation is the most harmful form of radiation.

d) Match each item under Column A with the item in Column B. Rewrite the correct pairs by writing the alphabet against the number in the space provide. **[5]**

Column A	Column B
1. The Perseverance rover	a. Low ionizing power
2. Coolant in motor car's radiator	b. Radioactive wastes.
3. Nuclear energy	c. Short range communication
4. Radio waves	d. NASA's mission to hunt directly for these "bio-signatures".
5. α-particles	e. High specific heat capacity of water.
	f. Refraction and diffraction.
	g. NASA's missions to look for signs of past water activity on Mars.
	h. High ionizing power.

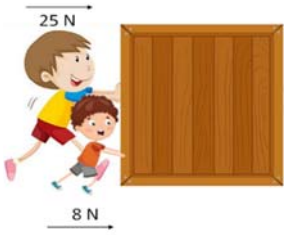
SECTION B [60 Marks]
ATTEMPT ANY SIX QUESTIONS

Question 2

a) Dawa's SUV weighs 2000 kg. What is the force of gravity acting on his SUV at the Earth's surface? **[2]**

b) NASA has announced that it is sending two new missions to Venus in order to examine the planet's atmosphere and geological features somewhere around 2028 to 2030. Imagine you are one of the team members of mission Mars. What type of exploration would you suggest for the mission? Why? **[2]**

c) Two students are planning for a new sitting arrangement in the physics laboratory. In doing so, they exert a force of 25 N and 8 N respectively to the same cupboard on a frictionless floor as shown below. If the cupboard is displaced by 7 m, what is the work done? **[2]**



d) School caretaker who is a regular listener to Kuzoo FM radio programmes experienced signal issues recently. He complained and engineers at the studio tried amplifying the signal. Engineers observed that each time the signal was amplified, the unwanted noise was also getting amplified, weakening the original radio broadcast. **[2]**

i. What kind of radio signal school caretaker is listening to?
ii. Why is the signal in the radio not very clear?

e) A television repairer connected transformer to a d.c. source and it didn't work. Why? **[2]**

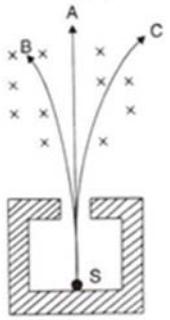
Question 3

a) When can a force exerted on a body pivoted at a point produce no turning effect? Explain. **[2]**

b) The cutting edges of tools like knives and blades are provided with sharp edges. Explain why? **[2]**

c) 45g of water at 50 ^{0}C in a beaker is cooled when 50g of copper at 18 ^{0}C is added to it. The contents are stirred till a final constant temperature is reduced. Calculate the final temperature. The specific heat capacity of copper is 0.39 $Jg^{-1}K^{-1}$ and that of water is 4.2 J $g^{-1}K^{-1}$. **[3]**

d) The diagram in the figure shows a radioactive source S placed in a thick lead walled container. The radiations given off are allowed to pass through a magnetic field. The magnetic field (shown as x) acts perpendicular to the plane of paper inwards. Arrows shows the paths of the radiation A, B and C. **[2]**



Name the radiations labelled A, B and C and explain clearly how you used the diagram to draw the conclusion.

e) Describe one condition where work done by the body is zero. **[1]**

Question 4

a) When a body is falling freely, will there be a change in the velocity? Justify your answer. **[2]**

b) (i) A forester wants to keep records of different wild animals in a locality. In order to take photographs of the animals during day time is possible with his camera but finds difficult to get clear picture in the dark or during night. What type of camera would you recommend him to buy in order to illuminate images in the dark? Why? **[2]**

(ii) Why do you think you get sun burns and tanning of the skin when you play outdoor games during sunny days? **[1]**

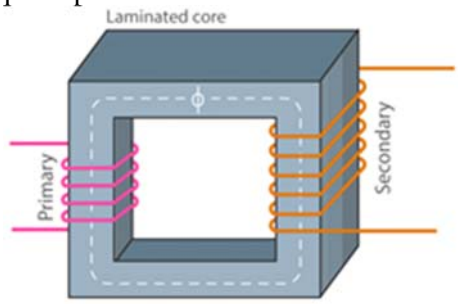
c) If you want to design a hydraulic system which exert a force 100 times as large as the one put into it, what must be the ratio of the area of the slave cylinder to the area of the master cylinder? **[2]**

d) Differentiate between electromotive force and terminal voltage. **[1]**

e) Yangchen weighs 600 N and she is wearing pencil heel slipper. The total area of two pencil heels is 4 cm^2. How much pressure would she exert on the ground if she stands on one foot? **[2]**

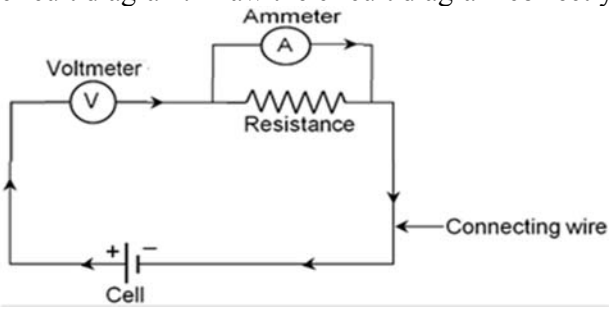
Question 5

a) Describe the parts and type of transformer given below. Explain its working principle. **[3]**



b) Some people think that space exploration is a waste of resources while others think that it is essential for mankind to continue to explore the universe in which we live. Discuss both sides and give your opinion. **[2]**

c) Observe the circuit diagram given below and find out what is wrong with the circuit diagram. Draw the circuit diagram correctly. **[2]**



d) Why are water bodies, such as lakes, relatively slow to respond to heating or cooling compared to the land surrounding them? **[2]**

e) State the conditions required for the fusion reaction to occur. Give reason in support for your answer. **[1]**

Question 6

a) Suppose you are planning to launch a rocket to the moon. Mention at least two conditions required for successful launching. **[2]**

b) An unstable uranium atom emits a neutron. How will its mass number and atomic number change? **[2]**

c) Radio wave is used for broadcasting radio and television programmes owing to its longest wavelength and high ability to diffract. How would Radio and television communication be if the microwave is used instead of radio waves? **[2]**

d) A skydiver jumps from a helicopter through an atmosphere, how would the drag force acting on him change as he accelerates down towards the surface of earth? **[2]**

e) Karma and Penjor load a 1.2m high truck with the bags of rice. Karma loaded 10 bags weighing 25kg each in 50 seconds while Penjor loaded 7 bags of maize each weighing 30kg in 40 seconds. Who is more powerful? **[2]**

[Take g= 9.8ms^{-2}]

Question 7

a) Amrit weighs 600N on earth, he landed on the surface of the moon and weighed again. To his surprise his weight was just 100N on the moon. Why did Amrit weigh less on the surface of the moon? **[2]**

b) You are working in a nuclear power plant. Mention at least two precautions that you must take to get rid of harmful effect of nuclear radiations. **[2]**

c) A patient goes to a doctor asking for the doctor to take an X-ray of his injured chest. Discuss the pros and cons that doctor would tell him before taking the X-ray. **[2]**

d) Bhutan has constructed many small and large hydropower plants from which it generates 1615 Megawatts to 1623 Megawatts of hydroelectricity. Do you think Bhutan should construct more of such hydropower plants? Support your answer with justifications. **[3]**

e) Why do you prefer digital signals for signal transmission? **[1]**

Question 8

a) Thermal energy was first discovered in 1847 by James Prescott Joule, after whom the unit of heat energy is named. While experimenting with fluids by agitating it, he found that its temperature increased. However, different substances have different heat capacity. Describe a substance with low heat capacity and a substance with high heat capacity. **[2]**

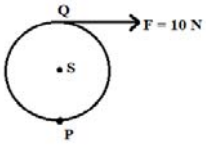
b) *"The amount of energy in the universe is always the same."* **[2]**

State the law that supports the given statement and justify the law with the help of an example.

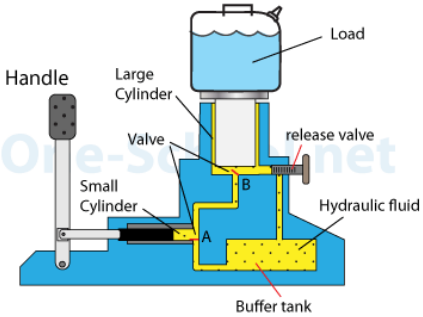
c) A wheel of diameter 2 m is shown in the figure with axle at S. If the 10 N force is applied at the point Q, calculate the moment of force about **[2]**

i) Point S

ii) Point P



d) Pascal's law mentions the transmission of pressure in a fluid and it has lots of applications. Figure … shows the application of the law in hydraulic jack. Analyse and explain the working of the hydraulic jack. **[2]**



e) "Space exploration is sending people or machines into space to visit other planets and objects in space. Mankind has dreamed of visiting the space for hundreds of years, but it wasn't until 1969 that the first person walked on the Moon." **[2]**

With the advancement in technology, there are various methods of space exploration. What type of exploration would you prefer? Why?

Question 9

a) A pair of equal and parallel forces, acting in opposite directions is called a couple. Draw a diagrammatic representation of a couple from our day to day activities showing the p[oint of application of forces. **[2]**

b) The relationship between current (I), voltage (V), and resistance R was established by German physicist *Georg Simon Ohm* in 1827. However, Ohm's law is not a universal law. Differentiate between ohmic conductor and non-ohmic conductor. **[2]**

	Ohmic-conductor	Non-ohmic conductor
Definition		
Example		

c) In terms of the construction of an electric motor and a.c generator, both of them consist of similar parts such as magnetic field, armature coil, slip rings and brushes. How are they different from one another? **[2]**

d) When a number of forces acting on a body produces no change in its state of rest or uniform motion, the body is said to be in equilibrium. Write two conditions that are true to the body at equilibrium. **[2]**

e) Electromagnetic spectrum is the entire distribution of electromagnetic radiation according to frequency or wavelength. All the radiation has some useful applications and harmful impacts. Imagine that you have discovered a new radiation and named it "Pogel." List two properties, a use and a harmful impact of the new radiation. **[2]**

ENVIRONMENTAL SCIENCE

SAMPLE BHSEC ENVIRONMENTAL SCIENCE (Class X)

INTRODUCTION

1. Subject background

Environment in totality encompasses those that are living and nonliving, tangible and intangible, which include materialistic, religion and culture. These are indispensable for the prosperity and wellbeing of all living things. The inter-relationship of people with the environment guided by the social and spiritual values is well captured in the tenets of the Gross National Happiness, the developmental philosophy of Bhutan.

The study of Environmental Science relies heavily on experiential learning and application; hence attempts to equip students with skills and competencies that are necessary to explore, analyse and build knowledge based on various aspects of the environment. It engages students in hands-on experiences, exposes students to complex challenges of life and environment, encourages critical thinking, and assists students to develop problem-solving skills. With this array of skills, ES inspires students to construct new knowledge and create ideas of doing things differently, and helps improve their general education. These skills prepare them to perceive a wide range of career opportunities and challenges in the real world.

2. Goals and purpose of the subject

The goal of Environmental Science is to "build a cadre of young people equipped with knowledge, skills and values to engage them in the conservation of natural heritage, promote sustainable and equitable use of natural resources, and the prevention of all forms of environmental degradation in the pursuit of GNH".

3. Broad Learning outcomes / Competencies

By the end of key stage 4 (class X), the learner should be able to:

1. **Ecosystem:**
   - 1.1 Exhibit understanding of the ecosystem, its spheres, and the effects of human activities on the natural processes to generate ideas on the significance of their inter-relationship and of how the relationships help in maintaining balance in the ecosystem.
2. **Balance in Nature:**
   - 2.1 Analyse diverse factors that influence the ecosystem equilibrium and stability and communicate through the representations of flow charts and mathematical calculations to raise awareness among people.
3. **People and Environment:**
   - 3.1 Justify how human lifestyle, based on the understanding of the provisions of natural resources and the ecological footprint, is related to resource consumption and stimulate behaviour change for sustainable well-being of people and the environment.
4. **Natural Resource Degradation:**
   - 4.1 Explore how human societies have evolved and transformed their dependencies on the

natural resources to explain the diverse humans' activities influencing the condition of the environment.

4.2 Investigate how humans use the diverse landforms and their impacts on the land, and design scientific methods for the sustainable use of land and waste management collaboratively with the local community.

5. Pollution:

5.1 Explain how humans' activities are responsible for pollution by using the knowledge and understanding of pollution and its types, and design interventions to address pollution issues in the locality.

6. Disaster and Environment:

6.1 Analyse the relationship between hazard, vulnerability, risk, disaster, and response capacity and deduce ways to reduce disaster in the community.

6.2 Assess disaster risk in school or community to understand the relationship between hazard, vulnerability, risk, disaster, and response capacity and deduce ways to reduce disaster in the community to save life and properties.

7. Biodiversity and its conservation:

7.1 Use scientific methods to evaluate the status of biodiversity and its benefits of biodiversity in Bhutan, based on which identify risk to loss of biodiversity and its impending impacts on biodiversity conservation.

8. Watershed management:

8.1 Analyse the causes of degradation of watersheds and their impacts, based on which create innovative ideas and strategies for adoption in the watershed management process.

9. Energy Resources:

9.1 Evaluate energy resources and consumption patterns in Bhutan relative to some of the developed countries and inform decisions on the formulation of practical ideas to conserve energy.

10. Environment and Development

10.1 Evaluate the consequences of development on the environment based on the developmental parameters and sustainable development approach.

4. Salient Learning experiences

4. Salient Learning experiences

The curriculum is grounded on the principle of competency based and experiential learning with emphasis on development of various skills through activity-based approaches, including indoor, outdoor activities, hands on experiences, experiments, case studies, surveys, debates, discussion, team work, folk art and, so on. It encourages teachers to engage students continuously in experimentation, investigation, and project works, design of different experiments and associated principles, reasoning and arguments with scientific evidence, analysis and interpretation of data to develop coherent knowledge and understanding.

5. Purpose of the Assessment

Assessment is the process of gathering and interpreting evidence to make judgments about student learning. It is the crucial link between learning outcomes, content and teaching and learning activities. Assessment is used by learners and their teachers to decide where the learners are at in their learning, where they need to go, and how best to get there. The summative assessment in particular is the means to benchmark students' learning by which aptitudes in subject disciplines are interpreted; hence the suitability for the diverse career options.

6. Question types used and their underpinning principles or big ideas

With the understanding that the New Normal Curriculum underpins the Competency Based Learning principles driven by open source and experiential learning approach leveraged on digital technologies, all the test items shall be Competency Based Test items (CBT). The CBT gauges holistic learning achievements of students of bigger conceptual knowledge competencies articulated in critical thinking, creativity, analytical, design, computational and social judgment tasks in examinations.

Therefore, CBT papers in all subject are informed by the following broad underlying principles:

i. All the test items are CBT based on the concepts and principles of competency-based assessment.

ii. The competency-based test items are purported to test a wide range of behavioural, cognitive, and knowledge-based skills of students. Therefore, tasks in question papers stimulate students to make connections of the learnt concepts and information to a specific situation of the task by deploying multiple cognitive, social and physical skills.

ii. Question patterns differ across the subject as informed by the subject nature and the corresponding characteristics. The ES question paper consists of two sections: Section A (40%) - objective type of questions, Section B (60%) - extended response questions.

iii. Understanding that assessment is giving students the opportunity to display their abilities and potential, not as punishment, and that each of students have individual differences in learning style, diversity in question types is emphasized. This is also to uphold the inclusive education principles and the philosophy of education for all.

iv. Adopt a thematic approach to writing test items so that maximum conceptual knowledge, skills and values judgment in the subjects are assessed with a smaller number of test items.

v. The weighting for the summative assessment (SA) through examination is 60% and CFA is 40%.

SAMPLE BCSE ENVIRONMENTAL SCIENCE (Class X)

SECTION A (40 Marks)
ANSWER ALL QUESTIONS

Question 1

a) For each question, there are four alternatives: A, B, C and D. Choose the correct alternative and circle it. Do not circle more than ONE alternative. If there is more than one choice circled, NO score is awarded. [25]

i. Carbon is processed through a biogeochemical cycle in the biosphere. Which of the processes is not related to this?

A Transpiration.
B Photosynthesis.
C Combustion of fossil fuels.
D Decomposition of plants and animals

ii. Consumption is the use of goods and services by an individual, while production is the rate of generation of resources. The availability of resources influences the consumption, and therefore affects the

A lifestyle of people.
B wealth of the people.
C resources people consume daily.
D spiritual well-being of the people.

iii. Land use pattern describes how people use the land for diverse purposes. Which one of the following land uses comparatively has a more adverse impact on the environment in Bhutan?

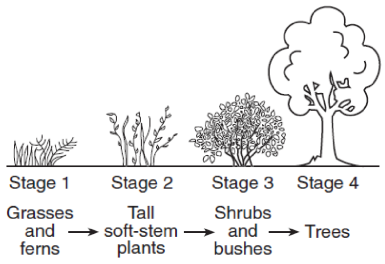
A Forest.
B Pasture.
C Settlement.
A Agriculture.

iv. Animals change their habitat year-round in response to climatic changes. Which of the following depicts phenological events?

A Migration of birds to escape cold winter.
B Melting of polar ice due to global warming.
C Depletion of ozone due to excess greenhouse gases.
D Celebration of Black Necked Crane festival in Bhutan.

v. After a forest fire, an ecosystem undergoes a change over a long period of time as shown in the diagram. Such ability of an ecosystem to regenerate after disturbance is

A phenology.
B evolution.
C resilience.
D resistance.



vi. The extent to which a community, structure, services or geographic area is likely to be damaged or disrupted by the impact of particular hazard is termed as

A risk.
B capacity.
C vulnerability.
D hazard assessment.

vii. Risk is generally expressed as a function of hazard and vulnerability. High vulnerability and high hazard are associated with

A no risk at all.
B low disaster risk.
C high disaster risk.
D medium disaster risk.

viii. There are nine tasks in disaster management. All of the following are tasks of this model, EXCEPT

A control rumors, provide accurate information.
B counsel those who have suffered trauma and bereavement.
C provide security; prevent looting, protect persons and property.
D assess secondary social problems such as health epidemics, displaced persons.

ix. Prior to the establishment of developmental programs, a feasibility study, including the assessment of environmental impacts, is conducted. A project may be deemed unsustainable, if it is

A socially intrusive.
B culturally favourable.
A financially unaffordable.
B environmentally invasive.

x. Species of plants and animals are indispensable for the survival of all living things and the health of ecosystems. Through excessive exploitation, gradually species are erased from the face of the earth. In order to promote the sustainability of the biodiversity in your locality, which one of the following activities would you minimize as the top priority?

A pollution of habitat.
B hunting of animals.
C destruction of habitat.
D introduction of new species.

xi. Which one of the following statements characterizes wind energy generation?

A Wind energy generation depends on the speed of the wind.
B Wind energy generation is possible in all regions of Bhutan.
A Wind energy generation depends on the height of turbine blades.
B Wind energy generation can be combined with other energy sources.

xii. There is hardly any grass left in the grassland for the deer to graze. This indicates that the grassland

A deer do not like the grass.
B deer are being hunted for meat.
C has reached its carrying capacity.
D tigers are also around in the grassland.

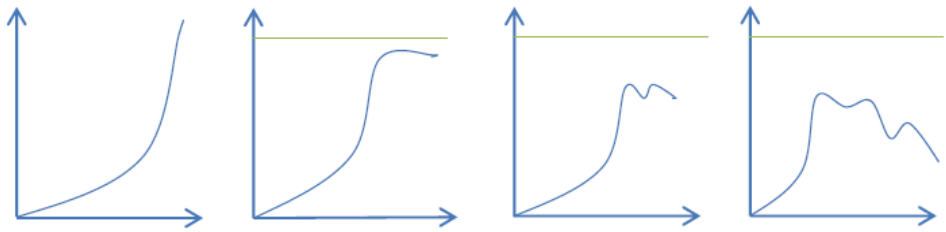
xiii. Normally in the phosphorus cycle, the amount of phosphorus eroded from the soil is more than the amount added. This continuous loss is due to

A leaching, erosion and surface runoff.
B decomposition, erosion and leaching.
C geological uplift, leaching and erosion.
D leaching, decomposition and surface runoff.

xiv. After an earthquake, there are activities like rescue, relocation, and providing food and water. The multi-agency provides these facilities to

A meet the basic needs of people.
B improve transportation facilities.
C warn aftershock of an earthquake.
D restore the telecommunication facilities.

xv. The graph below represents the carrying capacity of an ecosystem. Study the graph to answer the question.



I II III IV

Identify the graph, which has reached its carrying capacity.

A I
B II
C III
D IV

xvi. Rich people tend to consume more resources and at the same time produce more waste. This practice threatens our existence and that of many organisms on the planet. The above situation best describes

A conservation.
B overharvesting.
C ecological footprint.
D sustainable economy.

xvii. Which of the following has the greatest impact on native biodiversity?

A Forest fire.
B Hunting of animals.
C Soil erosion and floods.
A Introduction of new species.

xviii. Which one of the following is true about hydropower energy?

A Protects river ecosystem.
B Does not change the landscape.
C Helps in flood control by damming.
D No pollution during power generation.

xix. The diagram below best explains the effect of

A weather.
B climate change.
C global warming.
D greenhouse gases.

xx. When habitats are destroyed, organisms that occupy the habitats migrate, or there will be population decline making organisms vulnerable to extinction. This happens because

A of reduced carrying capacity.
B of increased carrying capacity.
C organisms never stay in one habitat.
D organisms can easily adapt to new environments.

xxi. Which of the following are the challenges in achieving sustainable development goals in Bhutan?

I. Small size of population.
II. High dependency on external debt.
III. Developing economic infrastructure due to steep mountain terrain.
IV. Internal migration leading to unequal distribution of social services.

A I, II and III
B I, III and IV
C II, III and IV
D I, II and IV

xxii. Which of the below is not an idea behind solid waste management?

A Disposal.
B Storage and collection.
C Stop waste generation.
D Control of waste generation.

xxiii. With reference to biogeochemical cycles, how do elements and matter flow in the environment?

A From a source to a sink.
B From a sink to a sink.
C From a sink to a source.
D From a source to source.

xxiv. Since 1901, global surface temperature has risen at an average rate of 17.7^{o}C every ten years. Which of the following phenomena is the impact due to the increase in global temperature of the Earth?

A Rising sea level.
B Frequent occurrence of earthquakes.
C Decreasing erosion within coastal areas.
D Increasing the formation of ice in the Polar Regions.

xxv. Energy from non-renewable energy sources is environmentally costly. There is a trend of race for technology for clean energy. Identify the solar energy technology from the following.

A Submarines.
B Digital camera.
C Smokeless stoves.
D Photoelectric cells.

b) Fill in the blanks with appropriate word/s. [5]

i. Cannibalism is ……. factors that affect the stability of an ecosystem.
ii. The surplus population in an ecosystem results in …… in carrying capacity.
iii. Climate change is causing glaciers to recede and have high potential to result in ……..…..
iv. The Royal Government of Bhutan has adopted the philosophy of …… as the holistic approach to sustainable development.
v. The system of heating, cooling and circulation of water from the Equator to the Atlantic is called the global ……circulation system.
vi. The amount of resources required by people and its availability in the bioproductive area is best explained by …….. footprint.
vii. The amount of solar energy harnessed depends on ……. and duration of solar radiation.
viii. Any project has to mandatorily carry out ……. to measure the impact on the environment.
ix. The conversion of forest area to agriculture is an example of ……

x. Closeness of each species in an environment is referred to as ……

c) Match each item under column A with the most appropriate item in column B. Rewrite the correct pairs by writing the alphabet against the number in the space provided. [5]

Column A	Column B
a. GHG emissions due to submergence of vegetation.	i. Nitrifying bacteria.
b. Does not work if wind speed is too less.	ii. Denitrifying bacteria
c. Terraced or un-terraced agricultural land for cash crops.	iii. Basel Convention
d. Terraced wetland for paddy cultivation.	iv. Vienna Convention
e. $NH_4 \rightarrow NO_2$	v. Hydropower reservoirs
f. $NO_3 \rightarrow N_2$	vi. Wind turbines
g. Ensure conservation of biodiversity.	vii. Kamzhing
h. Control entry of invasive species across the borders.	viii. Chuzhing
i. Controls trans-boundary movement of hazardous wastes.	ix. BAFRA
j. Protects stratospheric ozone layer.	x. NBSAP
	xi. Solar panel
	xii. Ramsar Convention

d) Write TRUE or False for the following statements. [5]

a. Wildlife sanctuary is an in-situ conservation effort.
b. Climate change has influence over the phenophases of plants and animals.
c. Covid-19 pandemic is an example of a technological disaster.
d. Natural resource degradation can result in environmental degradation.
e. Leachate can pollute land and groundwater.
f. Damming of rivers helps in creating space for breeding cycles of fish species.
g. Low resistance is advantageous to an ecosystem which relies on natural disturbance.
h. Change in consumption pattern and production has posed a challenge to sustainable development.
i. A person requiring a larger bioproductive area is living an under-consumption lifestyle.
j. Land filling is an economic alternative for solid waste disposal and it can be implemented easily.

SECTION B (60 Marks)
Attempt any SIX questions.

Question 3

a) Refer to the following statement to answer the questions that follow:
"The carrying capacity of a lake for trout is 200" [2]
   i. If the lake becomes half the size of the original, can the lake still sustain 200 trout? Justify.
   ii. If chemical fertilisers are drained into the lake, what would happen to the carrying capacity of the lake for the trout? [1]

b) Use a flow chart to relate how the environmental degradation leads to the series of disasters. Give a relevant example. [3]

c) What Bhutan has a rich species diversity of flora and fauna. How does the rich biodiversity maintain the stability and health of an ecosystem? [2]

d) Land use for settlement has slightly increased over the years, but has a huge impact on the environment. Generate one innovative solution for sustainable use of land resources. [2]

Question 4

a) Compare how lifestyle and resource consumption patterns of people have undergone major transformation with reference to ancient days and present day. [2]

b) Discuss three strategies adopted by Bhutan towards climate change. [2]

c) Bhutan should promote the use of solar energy. Justify. [2]

d) Identify some of the anthropogenic activities that contribute to disturbing the nitrogen cycle? [2]

e) What are the roles of the Gross National Happiness Commission? [1]

f) Incineration method can decrease the space of landfill occupied by wastes. What is incineration? [1]

Question 5

a) With Covid-19 protocols mandating the use of face masks, disposal of masks is adding to the mounting waste problem in the country. Face masks are all over – in the drains, bushes, creeks and cracks of walls, by the roadside and in streams and rivers.
   i. Face masks are considered a hazardous waste. Justify. [1]
   ii. Suggest some measures to curb such waste issues. [2]

b) Elaborate the concept of greenhouse effect and its significance to the global climate. [3]

c) Write four purposes of reduction in the volume of solid waste. [2]

d) Making use of two species of plants or animals and a common resource in a given ecosystem, explain the relationship between population, productivity, consumption and carrying capacity of that ecosystem. [2]

Question 6

a) Briefly explain how a policy action influences lifestyle? [1]

b) Carrying capacity to survive in a lifeboat after shipwreck depends on how much food and water they have, how much each person eats and drinks, how many days are left to remain afloat. Based on the situation, identify factors affecting the carrying capacity? [2]

c) Bhutan's natural resources are increasingly coming under various pressures. What are some of the consequences you can foresee if natural resources degradation is unchecked? [2]

d) What is phenology? Briefly discuss how a farmer uses the knowledge of phenology for farming activities? [3]

e) How does the entertainment industry promote sustainable development in Bhutan? [2]

Question 7

a) Human population cannot continue to grow indefinitely. There are limits to the life-sustaining resources earth can provide us. There is carrying capacity for human life on the earth.

i. How will you explain carrying capacity to a farmer? [1]

ii. What are some of the regulating factors that keep the population size at equilibrium? [2]

iii. How can we extend carrying capacity? [2]

b) Identify some of the challenges faced by Bhutan in implementing the sustainable development initiatives. [2]

c) The need for energy conservation is felt by all individuals around the world. Design an action plan to conserve energy for your school. [2]

d) What are the disadvantages of harnessing the wind energy? [1]

Question 8

a) The table given below represents the point score of a 20-years old student who was trying to calculate her ecological footprint. Study the table and answer the questions.

Category	Score
1. Water use	80
2. Food	600
3. Transportation	900
4. Shelter	300
5. Energy use	250
6. Clothing	200
7. Stuff	60
8. Fun	200
Grand Total	…….
Ecological Footprint = Grand Total divided by 100 = ……. Hectares (To convert to acres, multiply hectares by 2.47)	

i. Calculate the ecological footprint of the student? [2]

ii. Suppose the Average Earth Share for an individual is 4.7 acres, determine whether the Earth can sustain the human population if everyone lived the same lifestyle as the student. [2]

iii. In which category did the student consume a high amount of resources? [1]

iv. State the significance of measuring Ecological Footprint. [2]

b) Identify any three major environmental achievements of Bhutan. [2]

c) Suggest any two measures to curb the extraction of timber from forest. [1]

Question 9

a) Farmers apply chemical fertilizers to ensure good yield. Explain how these practices impact the nutrient flow. [2]

b) How is ecosystem stability crucial in Bhutanese drive to achieve the goals of Gross National Happiness? [2]

c) Identify few challenges in mitigating risk of floods in Bhutan. [2]

d) How do the developing countries benefit from sustainable development? [2]

e) Illustrate the strategies for energy conservation in the form of an energy priority pyramid? [2]

Sample Test Blueprint

Class: X **Subject – Environmental Science**

Objectives/skills Chapter/content	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
Chapter 1	Sect-A.C.a,b(1)		Sect-B.9.a(2)	Sect-A.A.1.xxiii(1)	Sect-A.A.1.i(1) Sect-A.A.1.xiii(1) Sect-B.4.c(2)	Sect-B.2.b(3)	11
Chapter 2	Sect-A.B.i(0.5)	Sect-A.A.1.v(1) Sect-B.7.a,i(1)	Sect-B.7.a,iii(2)	Sect-A.D.vii(0.5) Sect-B.6.b(2) Sect-B.9.b(2)	Sect-A.A.1.xv(1) Sect-B.7.a,ii(2)	Sect-B.5.d(2)	14
Chapter 3	Sect-A.B.vi(0.5)	Sect-A.A.1.xvi(1) Sect-B.8.a,i(2)	Sect-B.8.a,iv(2)	Sect-A.D.ix(0.5) Sect-B.4.a(2) Sect-B.6.a(1) Sect-B.8.a,iii(1)	Sect-A.A.1.ii(1) Sect-B.8.a,ii(2)		13
Chapter 4		Sect-A.A.1.xx(1) Sect-A.B.ii(0.5)	Sect-B.8.b(2) Sect-B.8.c(1)	Sect-A.A.1.xii(1) Sect-B.3.a,ii(1)	Sect-A.D.iv(0.5) Sect-B.3.a,i(2) Sect-B.6.c(2)		11
Chapter 5	Sect-A.B.iii(0.5)	Sect-A.A.1.vi(1)	Sect-A.A.1.viii(1)	Sect-A.D.iii(0.5)	Sect-A.A.1.vii(1) Sect-A.A.1.xiv(1) Sect-B.3.b(3) Sect-B.9.c(2)	Sect-B.2.c(2)	12
Chapter 6	Sect-A.B.v(0.5)		Sect-B.4.b(2) Sect-B.5.b(3) Sect-B.6.d(3)	Sect-A.A.1.iv(1) Sect-A.D.ii(0.5)	Sect-A.A.1.xix(1) Sect-A.A.1.xxiv(1)		12
Chapter 7	Sect-A.B.x(0.5) Sect-A.C.i,j(1)		Sect-B.2.a,i(2)	Sect-A.D.i(0.5) Sect-B.2.a,iii(1) Sect-B.3.c(2)	Sect-A.A.1.x(1) Sect-A.A.1.xvii(1) Sect-B.2.a,ii(2)		11
Chapter 8	Sect-A.B.ix(0.5) Sect-A.C.g,h(1)	Sect-B.4.f(1)	Sect-A.D.x(0.5) Sect-B.5.a,i(1) Sect-B.5.a,ii(2) Sect-B.5.c(2)	Sect-A.A.1.iii(1) Sect-A.D.v(0.5)	Sect-A.A.1.xxii(1)	Sect-B.3.d(2)	12.5

Chapter 9	Sect-A.B.vii(0.5) Sect-A.C.e,f(1)		Sect- A.A.1.xxv(1)	Sect-A.A.1.xviii(1) Sect-B.4.c(2)	Sect-A.A.1.xi(1) Sect-A.D.vi(0.5) Sect-B.7.d(1)	Sect-B.7.c(2) Sect-B.9.e(2)	12
Chapter 10	Sect-A.B.iv(0.5) Sect-A.B.viii(0.5) Sect-A.C.c,d(1) Sect-B.4.e(1)		Sect-B.9.d(2)	Sect-A.A.1.ix(1) Sect-A.D.viii(0.5) Sect-B.7.b(2)	Sect-A.A.1.xxi(1) Sect-B.6.e(2)		11.5
Total	**10.5**	**8.5**	**28.5**	**25.5**	**34**	**13**	120

Note: The Number given in the brackets is the marks intended for each question

AGRICULTURE FOOD SECURITY

SECTION A [50 MARKS]

ANSWER ALL QUESTIONS

Question 1 **[15]**

a) For each question, there are four alternatives **A, B, C** and **D**. Choose the correct alternative and circle it. Do not circle more than **ONE** alternative. If there are more than one circled, **NO** score will be awarded.

i. Bhutan has a rich medicinal flora and fauna for which reason it is known by the name

A Drukyul.
B Lonjong Gyalkhab.
C Menjong Gyalkhab.
D Tshenden Gyelkhab.

ii. Asparagus is a perennial herbaceous plant and its shoots are used as vegetable. The shoots are known as

A crowns.
B spears.
C trillers.
D spikes.

iii. The maturity indices of oranges can be determined by measuring the acid content in it through neutralization reaction. This method of determining maturity indices of orange is classified as

A visual method.
B physical method.
C chemical analysis.
D computation method.

iv. Anthrax is a bacterial disease of cattle called Bacillus anthracis. Which of the following is the symptom of anthrax?

A Oozing of black coloured blood from ears and nose.
B Udder gets swollen and teat canal gets blocked.
C Lameness and swelling of quarters occur.
D The milk becomes water or bloody.

v. The culture of plants for food, comfort and beauty is defined as

A horticulture.
B floriculture.
C agriculture.
D viticulture.

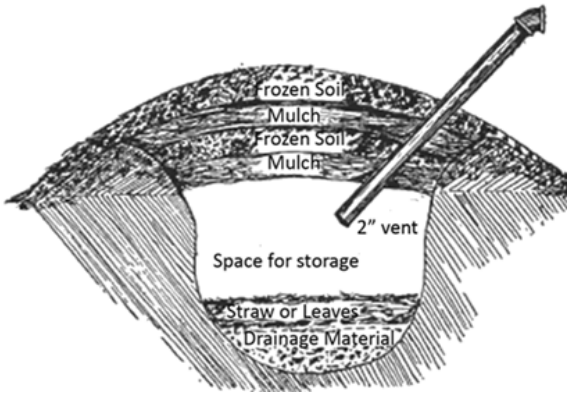
vi. This breed has big udder and are the highest milk producing dairy cows in the world. They are mostly black and white and are originally from the Netherlands. The breed of cattle described above is

A jersey.
B thrabam.
C brown swiss.
D holstein friesian.

vii. Which of the following is **NOT** true about the cultivation of the gladiolus?

A Gladiolus are summer flowers.
B Gladiolus is a perennial flower.
C Gladiolus are dormant in winter.
D Gladiolus are considered flower of gods.

viii. The process of conventional storage method shown in the diagram below is



A in-situ.
B clamps.
C sand or coir.
D pits or trenches.

ix. Vertical farming aims at higher productivity in smaller spaces. All given below are the characteristics of vertical farming **EXCEPT**

A it uses soil-less methods.
B crops are grown indoors.
C crops grown under natural conditions.
D crops grown under artificial conditions.

x. "It is good for reinforcing the lungs and kidneys, arresting bleeding and restoring energy and also anti-aging. It acts as anti-oxidant, anti-tumor effect, anti-fatigue and anti-stress. It also has tonic and aphrodisiac properties." The above statement is the medicinal values of

A inula racemosa.
B cordyceps sinensis.
C zingiber officinale.
D cymbopogon species.

xi. Chillies can be used as an insecticide. The hotness of chilli is due to a chemical called

A niacin.
B lycopene.
C capsaicin.
D riboflavin.

xii. Thinning is very important aspect of removing fruits in the early stage of fruiting. It is done mainly to

A avoid congestions.
B reduce the production.
C compromise the quantity.
D have large and quality fruits.

xiii. The post-harvest losses in vegetable are like rooting in tuber vegetables, seed germination, greening of potatoes, toughening and sponginess in green beans, carrot and radish. These sorts of losses are classified as

A physio-biochemical losses.
B mechanical losses.
C microbial losses.
D physical loss.

xiv. "Vertical farming is the future of agriculture. There is a huge degradation of cultivable land occurring in recent times and demand for food is increasing day by day as the population rise". Which is **NOT** the advantage of the vertical farming?

A environmentally friendly
B reliable year-round crop production
C it is very expensive method of farming
D unaffected by adverse weather conditions

xv. Landscape design is an art and its effectiveness depends on the creativity of a designer. The designer must include different form of elements. Which element of design create moods and used for visual interest?

A line
B form
C colour
D texture

b) Match each item in **column I** against the most appropriate item in **column II**. Write only the alphabet against the number in the space provided below. **[5]**

Column I		Column II	
i.	Rhizome that is mainly used as spices	a.	maturation
ii.	Indicative of the fruit being ready for harvest	b.	onions
iii.	Using an element more than once throughout a design	c.	ginger
iv.	A clustered fruit composed of numerous fruitlets each with its own seeds	d.	apple
v.	Sensitive to the toxic effect of aluminium	e.	repetition
		f.	strawberry

i.	
ii.	
iii.	
iv.	
v.	

c) Fill in the blanks with appropriate word(s). **[5]**

i. _____ is the visible features of an area of land, often considered in terms of their aesthetic appeal.

ii. The practice of growing crops in vertically stacked layers is known as _____.

iii. Tomato is rich in _____ which may have beneficial health effects.

iv. Ticks are blood sucking _____ and they transmit diseases like babesiosis.

v. _____ is the last stage, characterized by natural degradation of the fruit or vegetable, as in loss of texture, flavour.

d) Write **TRUE** or **FALSE** against each statement in the space provided. **[5]**

i. Symptoms of scours are watery stools and dehydration similar to diarrhoea in humans. (_____)

ii. Onions tend to flower when grown in the sunlight. (_____)

iii. Haemorrhagic septicaemia is an acute viral disease occurring early in monsoon. (_____)

iv. Foliage plants are outdoor plants grown primarily for their great looking flowers. (_____)

v. Landscape designer should avoid incorporating too many focal points into the landscape. (_____)

e) Correct the following statements by changing **ONLY** the underlined word(s). Re-write the correct word(s) only. **DO NOT** copy the whole sentence. **[5]**

i. Excessive irrigation before harvesting <u>increases</u> the shelf-life and sensory quality. (_____)

ii. Fruiting of <u>chillies</u> is poor under very hot conditions. (_____)

iii. Siri or thrabam are <u>excellent</u> milkers. (_____)

iv. Rose is a flowering shrub and it belongs to the family of plants called <u>begoniaceae</u>. (_____)

v. The process of calving in cattle is called <u>drying off</u>. (_____)

f) Answer the following questions.

i. Write down the full form of FYM and DTMS. **[2]**

ii. Explain briefly how lemon grass oil is extracted. **[2]**

iii. Hydrangea have puffy flower heads. Their flowers can be purple, blue, or pink. Hydrangea is a plant with medicinal benefits. The root and underground stem are used to make medicine. State **TWO** medicinal uses of hydrangea roots and stem. **[2]**

iv. The fruits which are imported from Australia to Bhutan is usually wax coated. What is the reason for wax coating fruits? **[2]**

v. Why do we need smart agriculture practices in this 21st century? **[2]**

vi. Farmers mulch chilli with organic matter like Artemisia leaves. Write **TWO** advantages of mulching chilli with artemisia leaves. **[2]**

vii. Mixed farming is a common practice of farmers in Bhutan.

a. What you mean by the term mixed farming? **[1]**

b. Do you see any advantages of mixed farming? Explain your opinion with **TWO** justifications. **[2]**

SECTION B [50 MARKS]

ATTEMPT **ANY FIVE** QUESTIONS

Answer the following questions in the space provided. The marks for each question are given in the brackets [ ].

Question 2

a. Manu is a very important medicinal plant in Bhutan. It is cultivated in Bumthang and Haa. What are the uses of Manu? **[2]**

b. Tomato is a soft red fruit that is often eaten without being cooked or cooked as a vegetable.

i. Name a crop that can be intercropped with tomatoes. **[1]**

ii. What is the problem associated with tomatoes if the night temperature falls below 13°C? **[1]**

iii. What type of soil is ideal for the cultivation of tomatoes? **[1]**

c. Name any **TWO** fruits that are grown in your locality and exported to earn income for the people and write their nutritional benefits. **[2]**

d. Cows of exotic breeds and crossbred cows continue to give milk even at advanced stage of pregnancy if they are not forced to dry. Drying a cow becomes very important aspect.

i. What you understand by the term drying off cattle? **[1]**

ii. Why should a cow remain dry for a period before calving? Write any **TWO** reasons. **[2]**

Question 3

a. Colour tends to be the most used element of landscape design composition. **[1]**

i. Name the warm colour that creates excitement.

ii. What components would you include in the landscape to create calming effect? **[1]**

iii. Write **TWO** importance of including foliage and flower colour in landscape design. **[1]**

b. The mechanical losses occur because produce degrades faster during the natural senescence process. How can you avoid mechanical damages of vegetables and fruits? **[3]**

c. Container gardens allow anyone with a little bit of space and sunshine to garden almost anywhere. There are so many plants that will grow successfully in containers. What are the fundamental principles to follow while growing vegetables in container garden? **[2]**

d. If you happened to come across a person suffering from multi-health issues such as respiratory, eye and urinary health problems. You as a traditional medical expert, which medicinal plant will you recommend to cure his health problem? **[2]**

Question 4

a. Write the care and management practices for the cultivation of chilli. **[3]**

b. Grafting is one of the techniques used to propagate the fruits trees. Explain the advantages of propagating fruit trees through grafting. **[2]**

c. Ap Dorji's jersey is sick. The udder of cow has become hard, swollen, hot and painful. The milk is watery or bloody.

i. What could be the disease of the Jersey? **[1]**

ii. Explain at least **TWO** control measures of this disease. **[2]**

d. Complete the table given below. **[2]**

Principles of designing landscape	
1. _____	Equalization of visual weight from one area of a landscape composition to another
Proportion	2. _____
3. _____	Harmonious relationship among all elements
Accent	4. _____

Question 5

a. Postharvest pests and diseases affect a wide variety of crops. Diseased produce poses a potential health risk. Examine some control measures of post-harvest diseases and pests. **[3]**

b. Is it possible to take container gardening as a large scale vegetable cultivation process? Mention **TWO** reasons to support your argument. **[2]**

c. Onion is an erect usually biennial herb grown for its bulb and are a cool season crop.

i. Write an advantage of intercropping onion with carrots. **[1]**

ii. What it the maturity indices for the onion? **[1]**

iii. What is the problem associated with the cultivation of onion if it is grown in very heavy soils and under very wet conditions? **[1]**

d. Arecanut is commonly chewed in Bhutan and is customary in celebrations and ceremonies but World Health Organization advises not to chew arecanut. Why do you think it is not good to chew arecanut? **[2]**

Question 6

a. Yaks are the grazing animal adapted to travelling great distances in harsh environment. Most yaks are found in the mountains and plateaus of Tibet and western China. In Bhutan, yaks are reared by transhumant pastoralists at an altitude ranging from 3000 – 5000 masl. Share your opinion on the advantages of rearing yaks by highlanders in our country. Support your opinion with **THREE** points. **[3]**

b. Explain the design of elements used in the landscape given below. **[2]**

c. Analyze the differences between manual harvesting and mechanical harvesting. Mention **THREE** differences. **[3]**

d. In our country, very few graduates take interest in farming. How would smart agriculture practices encourage graduates taking farming in our country? **[2]**

Skill / *Core Ideas/Chapters*	***Remembering***	***Understanding***	***Applying***	***Analyzing***	***Evaluating***	***Creating***	***Total***
Medicinal and Aromatic Plants and Spices in Bhutan	SA,Q1a,i(1)	SA,Q1f,ii(2)	SA,Q1b,iii(1)	SA,Q1a,x(1)			5
Growing of Vegetables II	SA,Q1a,ii(1)	SA,Q1b,ii(1) SA,Q1d,ii(1)	SA,Q1c,iii(1) SA,Q1e,ii(1)	SA,Q1a,xi(1)	SA,Q1f,vi(2)		8
Growing of Fruits II	SA,Q1f,i(2)	SA,Q1a,iii(1)		SA,Q1a,xii(1)	SA,Q1b,iii(1)		5
Starting a Diary Farm I	SA,Q1d,i(1)	SA,Q1a,iv(1)	SA,Q1a,vi(1) SA,Q1d,iii(1)	SA,Q1c,iv(1) SA,Q1e,iii(1)		SA,Q1e,v(1) SA,Q1f,vii(3)	10
Introduction to Landscaping and Ornamental Horticulture	SA,Q1c,i(1)	SA,Q1a,v(1)	SA,Q1a,vii(1) SA,Q1f,iii(2)	SA,Q1b,iv(1) SA,Q1d,iv(1)	SA,Q1d,v(1) SA,Q1e,iv(1)	SA,Q1a,xv(1)	10
Post-harvest Technology	SA,Q1b,i(1)	SA,Q1e,i(1)	SA,Q1a,viii(1) SA,Q1f,iv(2)	SA,Q1a,xiii(1)	SA,Q1c,v(1)		7
Smart Agriculture Practices		SA,Q1c,ii(1)	SA,Q1a,ix(1)	SA,Q1f,v(2)	SA,Q1a,xiv(1)		5
Total	7	9	12	10	7	5	50

Test Blue-print

Section A

Test Blue-print
Section B

Skills *Core Ideas/Chapters*	*Remembering*	*Understanding*	*Applying*	*Analyzing*	*Evaluating*	*Creating*	*Total*
Medicinal and Aromatic Plants and Spices in Bhutan	SB, Q2a(2)		SB, Q3d(2)			SB, Q7c(2)	6
Growing of Vegetables II	SB, Q2b(3)		SB, Q4a(3)	SB, Q5c(3)			9
Growing of Fruits II	SB, Q2c(2)		SB, Q4b(2)	SB, Q5d(2)			6
Starting a Diary Farm I		SB, Q2d(3)	SB, Q4c(3)	SB, Q6a(3)	SB, Q7a(3)		12
Introduction to Landscaping and Ornamental Horticulture		SB, Q3a(3)	SB, Q4d(2)	SB, Q6b(2)	SB, Q7b(3)	SB, Q7d(2)	12
Post-harvest Technology		SB, Q3b(3)	SB, Q5a(3)	SB, Q6c(3)			9
Smart Agriculture Practices		SB, Q3c(2)	SB, Q5b(2)	SB, Q6d(2)			6
Total	7	11	17	15	6	4	60

ECONOMICS

SECTION A: (50 MARKS)
ANSWER ALL QUESTIONS

Question 1

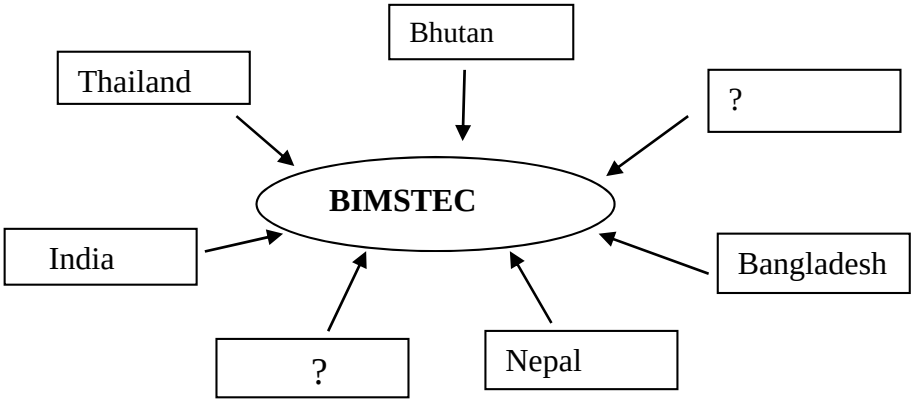
a) Read the following questions carefully. For each question there are four alternatives: A, B, C and D. Choose the correct alternative and circle it. If there are more than one choice circled, No score will be awarded. **[20]**

i. A profit maximization firm will stop hiring additional units of labour when

A MRP>Wage rate.
B MRP<Wage rate.
C MPL=Wage rate.
D **MRP=Wage rate.**

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and determination of equilibrium wage	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market	Calculate marginal productivity of labour	Remembering

ii.



Which are the **TWO** missing members of BIMSTEC?

A Japan and Maldives
B China and Myanmar
C **Myanmar and Srilanka**
D Afghanistan and Sri Lanka

Topic	Competency	Learning Objective	Bloom's Level
Regional and International Organisations for Economic Cooperation	Assess the contributions of regional and international organisations for the growth of Bhutanese economy	Explain contributions made by the international organisations to the Bhutanese economy.	Remembering

iii. Expansion and creation of capital goods in an economy is refered to as capital formation. Which of the following is **NOT** an example of capital formation?

A Construction of hydro-power projects
B Maintanence of school buildings
C Purchase of new machineries
D Increase in the inventories

Topic	Competency	Learning Objective	Bloom's Level
The Economy of Bhutan [Scope: Characteristics of Bhutanese economy, challenges and solutions of Bhutanese economy.]	Discuss the characteristics and challenges of Bhutanese economy to address the problems faced by the economy.	Explain the characteristics of Bhutanese economy.	Understanding

iv. Human Develpoment Index (HDI) measures all of the following indices **EXCEPT**

A Adult Literacy.
B Infant Mortality.
C Average Income.
D Population Growth Rate.

Topic	Competency	Learning Objective	Bloom's Level
Economic performance and Indicator	Assess economic performance using different economic indicators to examine health of the economy	Explain various economic indicators as a means to measure economic performance of a nation	Understanding

v. Study the information in table.

Wage Rate (in Nu)	Demand for Labour	Supply of labour	Market Situation
200	35	25	Excess Demand
300	30	30	Equilibrium
400	26	34	Excess Supply

The excess supply at the wage rate Nu.400 is

A 34.
B 26.
C 10.
D 9.

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market.	Illustrate determination of wage rate	Applying

vi. Some of the reasons for paying different wage rates to professional and semi-skilled labour are:

I Professional labour undergo advanced study
II Semi-skilled labour do heavy work
III Professional labour requires special training
IV Semi-skilled labour requires some form of training

Which of the following combinations justify payment of higher wage rate to the professional labour?

A I, II & III
B I, II & IV
C II, III & IV
D I, III & IV

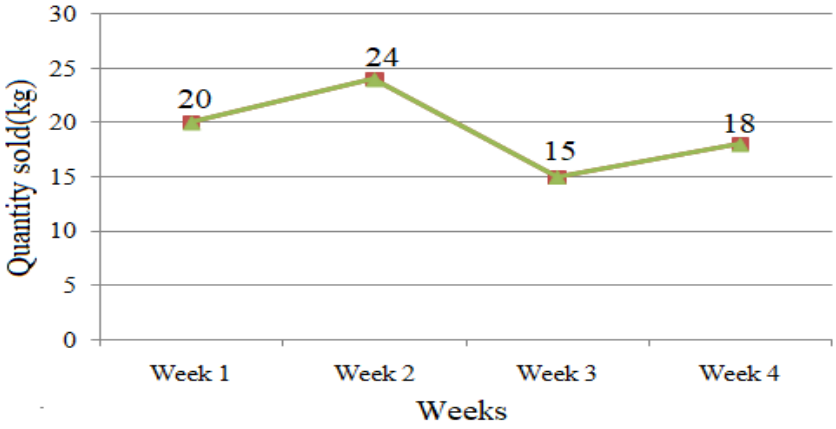
Topic	Competency	Learning Objective	Bloom's Level
Labour and its types [Scope: Definition of labour, types of labour and dignity of labour]	Discuss types of labour and their role in the economy to inculcate the sense of dignity of labour and prepare learners for the world of work.	Demonstrate sense of dignity of labour	Analyzing

vii. Mr. Sonam borrows Nu. 10,000 from the bank @ 7% interest rate for one year. What amount of interest will he pay to the bank after one year?

A Nu. 500
B Nu. 600
C Nu. 700
D Nu.800

Topic	Competency	Learning Objective	Bloom's Level
Interest [Scope: Meaning, reasons of Interest, computation of interest determination of interest rate and relationship amongst interest, saving and investment]	Establish relationships amongst interest rate, demand for and supply of capital to determine the interest rate in the factor market.	Compute simple and compound interest	Applying

viii. The graph shows chillies sold in the vegetable market in four weeks.



Aum Zam incurred a total expenditure of Nu 5500 on the plantation of chillies. She sold her entire chillies at Nu 130 per kilogram. What is her profit or loss?

A Nu 5450
B Nu 5600
C Nu 5750
D **Nu 4510**

Topic	Competency	Learning Objective	Bloom's Level
Profit [Scope: Profit as a driving force for economic activities, concept of revenue,	Compute profit to make rational decision in	Calculate profit, cost and revenue	Applying

cost with numerical examples.]	production process		

ix. When saving is greater than investment (S>I), the income in circular flow of income will

A increase.
B decrease.
C be constant.
D be in equilibrium.

Topic	Competency	Learning Objective	Bloom's Level
Circular flow of income [Scope: meaning and two sector model.]	Illustrate the circular flow of income to analyse the interdependence amongst the different sectors for appropriate policy measure for the health of the economy	Explain the circular flow of income in two sector models	Applying

x. With the reduction of consumption expenditure on the non-essential goods by the consumers, both the savings and funds for lending with the financial institutions will increase.
What is the likely effect of increased savings on the investment?

A Increase
B Decrease
C Remain constant
D Increase and fall later

Topic	Competency	Learning Objective	Bloom's Level
Saving and Investment [Scope: Meaning of investment and saving, type of savings and reasons for saving.]	Analyze the relationship amongst the interest rate, investment and saving to understand their role in the economic development.	Analyse reasons for saving	Applying

xi. Name the type of deposit from which people earn nominal interest rate.

A Fixed deposit
B Saving deposit
C Current deposit
D Recurring deposit

Topic	Competency	Learning Objective	Bloom's Level

Saving and Investment [Scope: Meaning of investment and saving, type of savings and reasons for saving.]	Analyze the reasons for saving to instil saving habits	Explain types of saving	Understanding

xii. Why is balance of payment most of the time unfavourable in Bhutan?

A The exports and imports are equal.
B The receipts from the rest of the world is equal to its payment.
C The receipts from the rest of the world is more than its payment.
D The receipts from the rest of the world is less than its payment.

Topic	Competency	Learning Objective	Bloom's Level
Balance of payments [Scope: Meaning & components, causes of deficit BoP and the measures to correct the deficit.]	Examine the status of Bhutan's Balance of Payment to strategize economic transactions	Explain the components of Balance of Payment	Analyzing

xiii. All of the following are the features of Bhutanese economy EXCEPT

A per capita income.
B unemployment.
C capital formation.
D share of different sectors to GDP.

Topic	Competency	Learning Objective	Bloom's Level
The economy of Bhutan	Discuss the characteristics and challenges of Bhutanese economy to address the problems faced by the economy.	Explain the characteristics of Bhutanese economy	Analyzing

xiv. The public finance helps to

A understand the status of government revenue and expenditure.
B achieve economic growth.
C raise government revenue.
D reduce tax burden.

Topic	Competency	Learning Objective	Bloom's Level
Public Finance [Scope: concepts of public revenue, types of taxes, importance of paying taxes and public expenditure.]	Discuss different sources of government revenue to analyse the financial status and minimise resource gap of the country	Evaluate the pattern of resource allocation by the government in the recent years	Analyzing

xv. Countries with higher rates of savings and investment have had a faster economic growth than those with lower saving rates. In order to meet the pace of global economic development, Bhutan needs to promote its savings and investment.

Which ONE of the following methods would not contribute to saving and investment?

A **Increase consumption expenditure**
B Provide awareness programmes
C Offer different saving schemes
D Set saving goals

Topic	Competency	Learning Objective	Bloom's Level
Relationship between consumption, saving and investment in Bhutanese economy	Explore ways to improve the rate of saving and investment to manage financial security and stability	Suggest ways to improve the rate of saving and investment in the economy	Analyzing

xvi. The unemployment rate of Bhutan is expected to increase to 4.20 percent by the end of 2020 from 2.7 percent in 2019.

(Source:NSB)

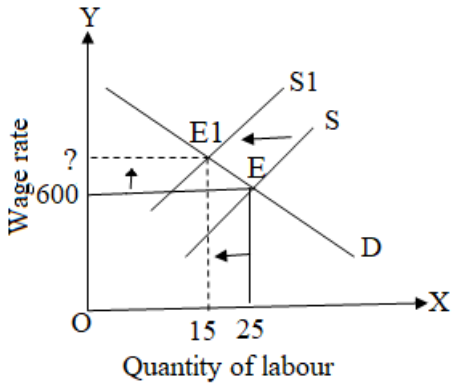
What does the increase in unemployment rate indicate in terms of economic performance?

A **Moderate economic growth**
B Decline in economic growth
C Constant economic growth
D Greater economic growth

Topic	Competency	Learning Objective	Bloom's Level

Economic performance and Indicator	Assess economic performance using different economic indicators to examine health of the economy	Explain various economic indicators as a means to measure economic performance of a nation	Analyzing	

xvii.



The shift in supply of labour towards left is caused by

A **unconducive working environment.**
B decrease in wage rate.
C friendly co-workers.
D good management.

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market	Illustrate determination of wage rate	Analyzing

xviii. Which of the following statements is TRUE?

A Bhutan exports automobiles
B Bhutan imports cordyceps
C Bhutan imports timber
D **Bhutan imports rice**

Topic	Competency	Learning Objective	Bloom's Level

Analysing data on export and import of Bhutan	Analyse the trend of export and import of Bhutan to formulate favourable trade policies	Analyse data on export and import of Bhutan to show the trend	Understanding

xix. Protectionism is a trade strategy which promotes
- A export of goods and services.
- B import of goods and services.
- C **domestic industrialization.**
- D dumping of goods.

Topic	Competency	Learning Objective	Bloom's Level
Free trade and protectionism	Analyse free trade and protectionism to suggest the best policy for betterment of the economy	Explain the concepts of free trade and protectionism	Analyzing

b) Fill in the blanks with appropriate word/s. **[5]**

i. Social goods such as road, education, street light, etc are provided by …….. sector.
Public

Topic	Competency	Learning Objective	Bloom's Level
Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness.	Discuss the benefit of public goods.	Understanding

ii. The houses furnished with modern amenities earn……..rent than those with minimum facilities.
Higher

Topic	Competency	Learning Objective	Bloom's Level
Rent [**Scope:** Definition, factors affecting rent]	Explore the factors affecting rent in our country to facilitate	Identify factors affecting rent in Bhutan.	Understanding

	better choice for housing.			

iii. A firm earns……..when its total revenue from the sale of goods exceeds the total cost of production.

Profit

Topic	Competency	Learning Objective	Bloom's Level
			Understanding

iv. The amount of investment depends on savings. The rise in consumption expenditure leads to……. in savings.

Decrease

Topic	Competency	Learning Objective	Bloom's Level
Relationship between consumption, saving and investment in Bhutanese economy	Discuss the co-relationship among consumption, saving and investment to maintain economic stability of the country	Explain the relationship among consumption, saving and investment.	Understanding

v. SAPTA helps gradual……of trade among the SAARC members.

Liberalization

Topic	Competency	Learning Objective	Bloom's Level
Regional and International Organisations for Economic Cooperation [**Scope:** SAARC, SAPTA, SAFTA, BIMSTEC, WTO and global economic issues]	Explore the objectives and functions of regional and international organisations for economic corporations to enhance mutual respect and gains	List down regional and international organisations for economic cooperation with their objectives and functions	Understanding

c) **Match each item under column A with the most appropriate item in column B. Rewrite the correct pairs by writing the alphabet against the number in the space provided.** **[5]**

Column A	Column B
i. The disterllery unit in Samtse pays a sum of Nu. 1million to the government for the export of alcoholic beverages	a. Land tax
ii. The Dorji Import House was levied a sum of Nu. 50,000 for bringing in goods from Bangkok	b. Green tax
iii. Karma earns Nu 45000 as her monthly salary. She pays 20% of her annual income as tax to the government	c. Property ownership tranfser tax
iv. The rising number of foreign vehicles brought in by regional tourists have added to traffic congestion and vehicular pollution. Therefore, government imposes certain tax on these vehicles to minimize the impact on the environment	d. Excise duty
v. Kesang sales her 2 acreas of land in Thimphu@Nu 3crores and pays 5% of this value to the government as tax	e. Municipal tax Property ownership tranfser tax
	f. Custom duty
	g. Personal Income tax
Answers	
Column A	Column B
i.	Excise duty
ii.	Cutom duty
iii.	Personal Income tax
iv.	Green tax
v.	Property ownership tranfser tax

Topic	Competency	Learning Objective	Bloom's Level
Public Finance [Scope: concepts of public revenue, types of taxes, importance of paying taxes and public expenditure.]	Discuss different sources of government revenue to analyse the financial status and minimise	Evaluate the pattern of resource allocation by the government in the recent years.	Analyzing

	resource gap of the country.			

d) Write TRUE or FALSE for the following statements. **[5]**

i. Public goods should have the feature of non-excludable and non-rival in nature.
True

Topic	Competency	Learning Objective	Bloom's Level
Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness.	Discuss the benefit of public goods.	Remembering

ii. Some occupations are considered superior in the labour market.
False (all occupations are considered equally important)

Topic	Competency	Learning Objective	Bloom's Level
Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness.	Explain the nature of goods and services.	Understanding

iii. Paid maternity leave can improve the productivity of female workers and enhance economic performance.
True

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationship amongst wage rate, demand and supply of labour to forecast the skills required for the future labour market.	Explain the factors affecting demand for and supply of labour	Understanding

iv. Appreciationt of domestic currency shows better performance of the country's economy.
True

Topic	Competency	Learning Objective	Bloom's Level
Economic performance and Indicator	Assess economic performance using different economic indicators to examine health of the economy.	Explain various economic indicators as a means to measure economic performance of a nation	Understanding

v. The World Trade Organization supervises and liberalizes regional trade.
False(international)

Topic	Competency	Learning Objective	Bloom's Level
Regional and International Organisations for Economic Cooperation [Scope: SAARC, SAPTA, SAFTA, BIMSTEC, WTO and global economic issues]	Explore the objectives and functions of regional and international organisations for economic corporations to enhance mutual respect and gains	List down regional and international organisations for economic cooperation with their objectives and functions	Understanding

e) **Answer the following questions briefly.**

i. Sonam owns two five-storied buildings;one in Thimphu and the other in Lhuentse. Her annual rental income earned from Thimphu building is double that of the one in Lhuentse. **[1]**

How does the location of land affect the rent?

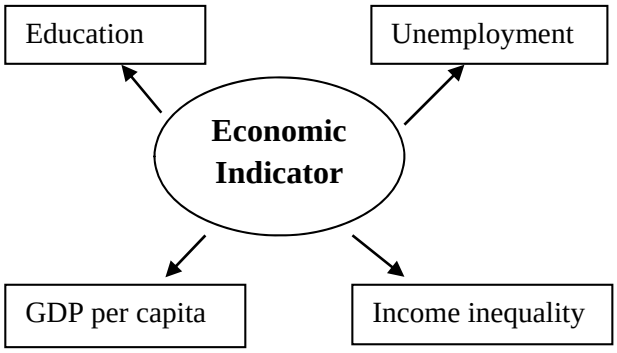
Topic	Competency	Learning Objective	Bloom's Level
Rent [Scope: Definition, factors affecting rent]	Explore the factors affecting rent in our country to facilitate better choice for housing.	Identify factors affecting rent in Bhutan.	Applying

ii. Public goods and services are provided by the government to promote economic and social welfare of the people. **[2]**
What are **TWO** examples of such goods used in your school?

Topic	Competency	Learning Objective	Bloom's Level

Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness	Discuss the benefit of public goods	Applying	

iii. Study the following economic indicators.



Using one of the economic indicators, explain economic performance of Bhutan. **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Economic performance and Indicator	Assess economic performance using different economic indicators to examine health of the economy.	Explain various economic indicators as a means to measure economic performance of a nation	Applying

iv. Study the following information. **[2]**

Firm	**Facilities**
A	Conducive working environment Good collegues Good facilities
B	Hostile collegues Poor facilities Unfriendly working environment

Will the supply of labour remain same in both the firms?Why?

Topic	Competency	Learning Objective	Bloom's Level

Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market.	Explain the factors affecting demand for and supply of labour	Evaluating		

v. Bhutan is one of the least populated countries of the world.
Do you think this will affect the future economic growth of Bhutan? Give reasons. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Economic Diversification [Scope: Role of private and public sectors in Bhutanese economy.]	Examine the role of public and private sectors for sustainable and equitable socio- economic development	Explain the role of public and private sectors in the economy	Evaluating

vi. Table below shows overall balance of trade in 2019.

Trade	Value in million
Export	41,828
Import	69,112
Balance	27,284

Source:Ministry of Finance

a) Why does Bhutan have this kind of trade balance? **[1]**
b) Suggest **TWO** measures to correct this type of trade situation. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Balance of payments [Scope: Meaning & components, causes of deficit BoP and the measures to correct the deficit.]	Examine the status of Bhutan's Balance of Payment to strategize economic transactions	Explain the difference between Balance of Trade (BoT) and Balance of Payments (BoP)	Analyzing Creating

vii. Introduction of a uniform 10 % customs duty on all goods imported from third countries was proposed during the recent National Assembly. **[3]**

(Source: bbs.bt, May 31,2021)

This revision might bring both positive and negative impacts on the Bhutanese economy.

Should Bhutanese worry about this tariff revision? Why? Give reasons.

Topic	Competency	Learning Objective	Bloom's Level
Free trade and protectionism	Analyse free trade and protectionism to suggest the best policy for betterment of the economy	Explain the concepts of free trade and protectionism	Evaluating

SECTION B: (50 MARKS)
ANSWER ANY FIVE QUESTIONS

Question 2

a) Define tax? **[1]**

Topic	Competency	Learning Objective	Bloom's Level
Public Finance [Scope: concepts of public revenue, types of taxes, importance of paying taxes and public expenditure.]	Discuss different sources of government revenue to analyse the financial status and minimise resource gap of the country	List the types of taxes collected in Bhutan	Remembering

b) Economic growth is necessary but it does not ensure the happiness and wellbeing of the people. **[2]**

State **TWO** limitations of Gross Domestic Product as an indicator of economic development.

Topic	Competency	Learning Objective	Bloom's Level
GNH and economic development.	Evaluate GNH as an alternative indicator of economic development to understand precedence of GNH over other indicators.	Explain GNH as an alternative indicator of economic development in Bhutan	Understanding

c) Study the following demand schedule. **[3]**

Wage rate (Nu.)	Demand for labour
200	**450**
250	**400**
300	**350**
400	**300**
500	**200**

Derive the demand curve and explain it.

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market.	Illustrate determination of wage rate	Applying

d) The performance of Bhutanese economy is largely dependent on few sectors such as hydro power and tourism. Therefore, cottage and small industries are identified as key areas of economic diversification. **[2]**

How important is the economic diversification for the country's economic growth?

Topic	Competency	Learning Objective	Bloom's Level
Economic Diversification [Scope: Role of private and public sectors in Bhutanese economy.]	Examine the role of public and private sectors for sustainable and equitable socio-economic development	Explain the role of public and private sectors in the economy	Analyzing

e) Housing crunch is a major issue in many of the urban centers in Bhutan. There are approximately 5,000 Bhutanese living across the borders due to limited housing facilities in Phuentsholing. **[2]**

Source: Kuenselonline.com/Solving-the-housing-crunch-in-pling/

Suggest **TWO** ways to address housing problem in urban areas of Bhutan.

Topic	Competency	Learning Objective	Bloom's Level

Rent [Scope: Definition, factors affecting rent]	Explore the factors affecting rent in our country to facilitate better choice for housing	Identify factors affecting rent in Bhutan	Creating

Question 3

a) What are some of the factors that limit the rate of saving in Bhutan? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Saving and Investment [Scope: Meaning of investment and saving, type of savings and reasons for saving.]	Analyze the reasons for saving to instil saving habits.	Analyse reasons for saving.	Understanding

b) Mr. Sonam borrows Nu. 10,000 from Bank of Bhutan for a duration of 36 months. He pays interest rate @ 7% annually.
Calculate the compound interest. **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Interest [Scope: Meaning, reasons of Interest, computation of interest determination of interest rate and relationship amongst interest, saving and investment.]	Establish relationships amongst interest rate, demand for and supply of capital to determine the interest rate in the factor market	Compute simple and compound interest.	Applying

c) In what ways is GNH better than GDP as an indicator of economic growth and development? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
GNH and economic development.	Evaluate GNH as an alternative indicator of economic development to understand precedence of GNH over other indicators.	Explain GNH as an alternative indicator of economic development in Bhutan	Analyzing

d) Free trade and protectionism are two trade policies widely practiced around the world. Free trade increases the size of the economy whereas protectionism build up industries in the domestic economy.

Source: www.citizensassembly.co.uk/trade-free-trade-v-protectionism

Of the two trade policies, which one should Bhutan practice? Why? **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Free trade and protectionism	Analyse free trade and protectionism to suggest the best policy for betterment of the economy.	Explain the concepts of free trade and protectionism	Evaluating

Questiion 4

a) List down **TWO** trade benefits that Bhutan enjoys as a member of SAPTA. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Regional and International Organisations for Economic Cooperation [Scope: SAARC, SAPTA, SAFTA, BIMSTEC, WTO and global economic issues]	Explore the objectives and functions of regional and international organisations for economic corporations to enhance mutual respect and gains.	List down regional and international organisations for economic cooperation with their objectives and functions.	Remembering

b) The exchange rate of Australian Dollar (AUD) for Ngultrum (Nu) as of July 3, 2021 was 1 AUD=54.8 BTN.

Source: www.bob.bt

Assume that there is a considerable fall in the value of Ngultrum against the AUD.

i. State whether you would get more or less ngultrum for every AUD. **[1]**

Topic	Competency	Learning Objective	Bloom's Level
The Exchange Rate and Its Role	Examine the role of exchange rate to make informed decision for trade	Explain the role of exchange rate	Understanding

ii. How would this influence the number of Bhutanese going to Australia as a tourist? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
The Exchange Rate and Its Role	Examine the role of exchange rate to	Examine the role of exchange rate to	Applying

	make informed decision for trade	make informed decision for trade	

iii. What would happen to the quantity of goods imported from Australia? **[1]**

Topic	Competency	Learning Objective	Bloom's Level
The Exchange Rate and Its Role	Examine the role of exchange rate to make informed decision for trade	Examine the role of exchange rate to make informed decision for trade	Analyzing

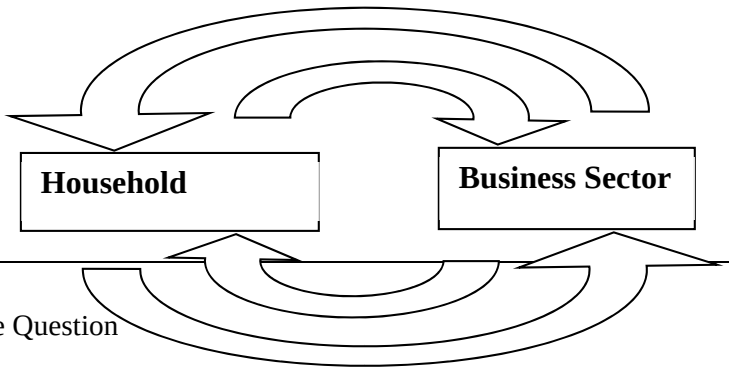
c) If demand and supply of labour are equal, what does it indicate about employment situation in an economy? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market.	Explain the factors affecting demand for and supply of labour	Understanding

d) Most of the developing nations in the world have engaged in massive privatization to enhance economic growth. **[2]**
Can privatization of industries help Bhutan? Justify.

Topic	Competency	Learning Objective	Bloom's Level
Economic Diversification [Scope: Role of private and public sectors in Bhutanese economy.]	Examine the role of public and private sectors for sustainable and equitable socio-economic development	Explain the role of public and private sectors in the economy	Evaluating

Question 5



a) Explain interdependence between the household and the business sector. **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Circular flow of income [Scope: meaning and two sector model.]	Illustrate the circular flow of income to analyse the interdependence amongst the different sectors for appropriate policy measure for the health of the economy	Explain the circular flow of income in two sector models.	Understanding

b) How is balance of payment different from balance of trade? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Balance of payments [Scope: Meaning & components, causes of deficit BoP and the measures to correct the deficit.]	Examine the status of Bhutan's Balance of Payment to strategize economic transactions.	Explain the difference between Balance of Trade (BoT) and Balance of Payments (BoP).	Analyzing

c) Discuss advantages and disadvantages of protectionism. **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Free trade and protectionism	Analyse free trade and protectionism to suggest the best policy for betterment of the economy.	Explain the concepts of free trade and protectionism	Analyzing

d) Is high supplementary budget an indicator of inefficient use of resources? Explain with TWO justifications. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Budget [Scope: Meaning and objectives of budget]	Formulate budget to allocate scarce resources efficiently.	Explain budget and its objectives.	Evaluating

Question 6

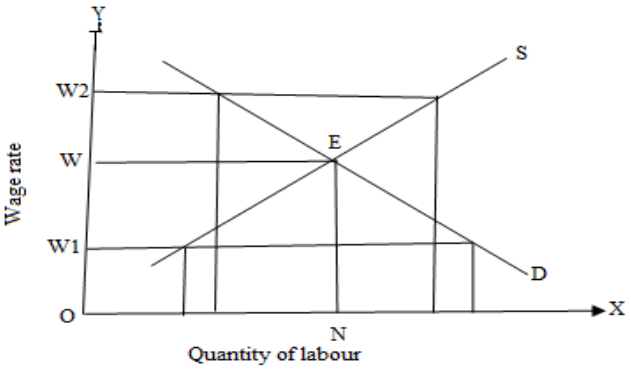
a) List **TWO** activities in your school which are aligned with the nine domains of Gross National Happiness. **[1]**

Topic	Competency	Learning Objective	Bloom's Level
GNH and economic development.	Evaluate GNH as an alternative indicator of economic development to understand precedence of GNH over other indicators	Explain GNH as an alternative indicator of economic development in Bhutan	Understanding

b) Suggest **TWO** benefits of public goods. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness.	Explain the nature of goods and services.	Understanding

c) Study the diagram.



i. Find out the wage rate and quantity of labour demanded and supplied at point E? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of	Establish relationships amongst wage rate, demand and supply of labour to determine the	Illustrate determination of wage rate	Applying

labour, determination of wage rate.]	wage rate in the factor market.		

ii. What will be the market situation if the wage rate is at OW_1 and OW_2? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
Demand and supply of labour and Determination of equilibrium wage rate [Scope: factors affecting demand and supply of labour, determination of wage rate.]	Establish relationships amongst wage rate, demand and supply of labour to determine the wage rate in the factor market.	Explain the factors affecting demand for and supply of labour	Analyzing

d) Public expenditure in Bhutan has been increasing over the years. Is this good for the country? Why? **[3]**

Topic	Competency	Learning Objective	Bloom's Level
Public Finance [Scope: concepts of public revenue, types of taxes, importance of paying taxes and public expenditure.]	Discuss the importance of public expenditure to understand the allocation and distribution of resources in bringing sustainable and equitable economic development.	Examine the areas of public expenditure in Bhutan.	Evaluating

Question 7

a) Define profit? **[1]**

Topic	Competency	Learning Objective	Bloom's Level
[Scope: Profit as a driving force for economic activities, concept of revenue, cost with numerical examples.]	Compute profit to make rational decision in production process	Explain profit, cost and revenue	Remembering

b) Study the information in the table below.

Age-wise distribution of population (in percentage)

Age group	**Male**	**Female**
0-14	13.20	12.90
15-24	10.40	9.30

25-54	22.55	19.50
55-64	3.15	3.00
65 & above	3.00	3.00

Source: PHCB 2017

Draw a bar graph to show the distribution of population age wise. **[2]**

Topic	Competency	Learning Objective	Bloom's Level
The Economy of Bhutan [Scope: Characteristics of Bhutanese economy, challenges and solutions of Bhutanese economy.]	Discuss the characteristics and challenges of Bhutanese economy to address the problems faced by the economy	Explain the characteristics of Bhutanese economy	Applying

c) With the fall in interest rate, demand for capital increases and its supply decreases causing excess demand for capital.

What would be the impact on the economy, if there is excess demand for capital? **[2]**

Topic	Competency	Learning Objective	Bloom's Level
[Scope: Meaning, reasons of Interest, computation of interest determination of interest rate and relationship amongst interest, saving and investment.]	Establish relationships amongst interest rate, demand for and supply of capital to determine the interest rate in the factor market.	Illustrate determination of interest rate.	Analyzing

d) How do taxes help in promoting social welfare of the people? **[1]**

Topic	Competency	Learning Objective	Bloom's Level
Public Finance [Scope: concepts of public revenue, types of taxes, importance of paying taxes and public expenditure.]	Analyse the importance of paying tax to inculcate the value of social responsibility and upliftment of social welfare of the community.	Demonstrate the importance of paying tax.	Applying

e) Like many other countries around the globe, Bhutan has been facing serious unemployment issues due to Covid-19. Around 50,000 Bhutanese working in the tourism and hospitality within the country and about 9,000 Bhutanese returning from overseas have become jobless. **[2]**

Source: Kuenselonline, October 12, 2020

What are some measures the government can adopt to solve the unemployment issues during such pandemics?

Topic	Competency	Learning Objective	Bloom's Level
Economic issues in Bhutan	Identify economic issues to suggest remedial measures to address the issues.	Analyse the recent economic issues and suggest remedial measures to address them.	Creating

f) Public goods are essential goods provided by the government for the social welfare of its citizens. **[2]**

How can people take good care of these goods? Suggest **TWO** measures.

Topic	Competency	Learning Objective	Bloom's Level
Nature of goods and services [Scope: Nature of goods and services, differences between public and private goods and its benefits.]	Discuss the importance of public goods to instil sense of responsibility and belongingness.	Discuss the benefit of public goods.	Creating

GEOGRAPHY

BCSC sample question paper

SECTION A (50 Marks)

COMPULSORY QUESTIONS

Question 1

a) Study the extract survey map of Bumthang, No. 78I/14 and answer the following questions. **[15]**

a) 'Development of an area depends on the transportation facilities'. Which region do you think is more developed in the map? Justify your answer with **TWO** points. **[2]**

b) A group of people from lhakhang at Wangchukling visits the lhakhang at grid square 5040 for an important ritual. Calculate the distance covered by them following the most convenient mode of transportation. **[2]**

c) Mention **TWO** importance of the topographical map. **[2]**

d) Why are conventional signs and symbols important for understanding the topographical maps? Write any **TWO** reasons. **[2]**

e) State reasons for the absence of human habitation in some parts of the area on the map **[1]**

f) How can you judge the suitability of land for agriculture from topographical map? Give **TWO** valid Reasons. **[2]**

g) Limited road connectivity as shown in the topographic map could be a cause of low economic growth. Do you think that expansion of road connectivity would enhance economic development in that place? Justify with **TWO** points. **[2]**

h) Dorji is a fresh graduate and he wants to establish a dairy farm. Which area in the topographical map do you think would be suitable for the purpose? Explain with **TWO** points.**[2]**

b) For each questions, there are four alternatives: A, B, C and D. Choose the correct alternatives and circle it. Do not circle more than ONE alternative. If there is more than one choice circled, NO score will be awarded. **[5]**

i. What is the distance between the earth and the sun?

A 149.6 million kms

B 169.34 million kms

C 179.67 million kms

D 15.98 million kms

ii. Which theory is most widely accepted based on the origin of Universe at present?

A Collision Hypothesis

B Big Bang Theory

C Nebular Hypothesis

D Binary Theory

iii. Who propounded the Solar Nebula Hypothesis?

A Immanuel Kant

B Pierre –Simon Laplace

C Chamberlain

D Sir James and Harold Jeffery

iv. The 113th National Day was celebrated at Pungthang Dewachhenpoi Phodrang and the Nation Address was broadcast in BBS at 9:30 a.m.

At what time will the Bhutanese people living in Australia (150˚E) receive the message?

A 1:30 p.m.

B 1:30 a.m.

C 12:30 a.m.

D 12:30 p.m.

v. 'The Principle explains the arrangement of settlements in which, the lower order centers are entirely dependent on the higher order centres. All the population of six lower order centres along with its population is served by the higher order centres'. The above description refers to

A Administrative Principle (K=7)

B Transport Principle (K=4)

C Marketing Principle (K=3)

D Administrative and Market Principle

c) Match each item under Column A with the items in Column B. Rewrite the correct pairs by writing the alphabet against the number in the space provided. [5]

Column A	Column B
i. Feathered dinosaurs appeared	a. Eocene Epoch
ii. Development of primitive mammals	b. Pleistocene Epoch
iii. New fold mountains developed, Early mammals expanded	c. Mississippian Epoch
iv. Some plants and animal species appeared	d. Miocene Epoch
v. Extinction of large mammals and birds. End of last ice age	e. Paleocene Epoch
	f. Lower Cretaceous Epoch

d) Fill in the blanks by writing the suitable word (s). [5]

i. The decrease in temperature with increase in altitude at the rate of 1° Celsius for every 165 metres is called**……**	
ii. The process in which the broken rock fragments are loosened and plucked by the glacier from beds and sides of valleys as they move over the fractured rock surface is called …….	
iii. Plants prepare food through photosynthesis using solar energy and are called….....	
iv. "Emigrate" means to move and to leave ones country or region to settle in another. This process is called……	
vi. The deposition is the process of depos vii. iting eroded materials in the depression or lowlands. It is also known as……	

e) State True or False. **[5]**

i. Longitudinal difference is added when the given longitudes are on opposite position (East and West).

ii. Bhutan standard Time (BST) is 30 minutes ahead of Indian Standard Time (IST).

iii. Every 360˚ of longitude 24 hours/1440 minutes should be added toward east of the Prime Meridian**.**

iv. Attrition is a process in which rock fragments carried by glacier rub against one another reducing their sizes.

v. The quaternary industry is an advanced form of tertiary sector. It provides the services related to knowledge and information.

f) Map work on Asia, South Asia and Bhutan.

i) In the outline map of Asia provided: **[5]**

a) Mark (ΔΔΔ) and name the mountain ranges Ural and Zagros

b) Shade and name the river Euphrates and Hwang Ho.

c) Shade and name the Black Sea and South Sea of Japan.

d) Shade and name the Mongolian Plateau and Plateau of Arabia**.**

e) Mark with thick dots and name Taiwan and Malaysia.

ii) In the outline map of South Asia provided: **[5]**

a) Mark (ΔΔΔ) and name Hindukush and Himalaya.

b) Shade and name Deccan Plateau and Thar Desert.

c) Mark (×××) name Khasi hill and Khyber Pass

d) Mark with thick lines and name the river Tapti and Mahanadi.

e) Mark with a thick dot and name Mumbai and Colombo.

iii) In the outline map of Bhutan provided: **[5]**

a) Mark with ( ][ ) and name Pele La and Yutong La.

b) Shade and name the rivers Wangchu Chhu and Chamkhar Chhu.

c) Mark with (ΔΔΔ) and name Jowodurshing and Gangkharpuensum.

d) Mark „T" over Trashiyangtse Dzong and „SD" over Samtse Dzong.

e) Mark with a dot and name Daifam and Manas.

SECTION B (50 MARKS)

THIS SECTION CONTAINS **SIX** QUESTIONS

ANSWER ANY **FIVE** QUESTIONS

Question 2

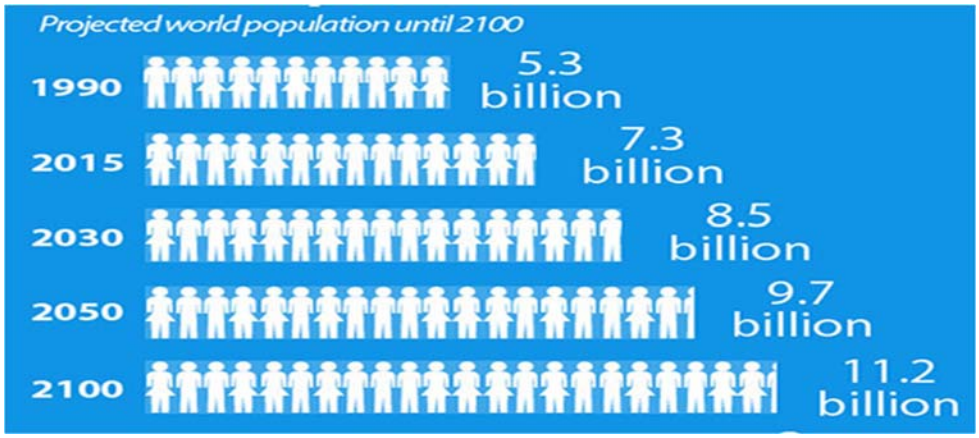
a) "Solar Nebula Hypothesis was first proposed in 1796 by a French astronomer and mathematician." Name the person who first proposed this theory. [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Bloom's Level
Time and Space	Origin of the earth	Discuss the origin of the earth with reference to the big bang theory and solar nebula	Apply appropriate technology to design maps for interpretation of geographical information	Spirituality and Values	Geo heritage	Applying

b) Explain any **TWO** features of species diversity in the ecosystem. [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Bloom's Level
People and the environment	Ecosystem and Biodiversity	Compare ecosystem with biodiversity	Analyze the impact of interactions amongst the spheres to comprehend the components of biodiversity	Spirituality and Values	Geo heritage	Understanding

c) Study the diagram below and answer the question below. [3]



Source: *UN Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2015 Revision*

Would the population of the World increase as projected above by the year 2100? Support with **THREE** reasons.

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Population and Impact	Project the population trend	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Sustainable Living	Geo Awareness	Evaluating

d) Imagine that you are going for a social campaign to remote villages of Bhutan to educate people about the negative impacts of population growth. What **THREE** important steps would you suggest to reduce the population? [3]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Population and Impact	Assess the impact of population growth.	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Sustainable Living	Geo Awareness	Creating

e) Do you agree that the use of geobrowser Google earth is important in our daily life? Justify your answer with **ONE** reason. [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level

Time and Space	Origin of the earth	Demonstrate skills of using geographic technologies and ICT	Apply appropriate technology to design maps for interpretation of geographical information	Digital Competence	Technologies and enablement	Evaluating

Question 3

a) Identify the following activity under the primary and service sector of industry. [2]

i. Lumbering

ii. Teaching

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Industry and Natural Resources of industries.	Classify the different sectors and types	Assess the significance of natural resources to conserve the eco system for sustainability	Enterprising and Industrious	Geo heritage	Remembering

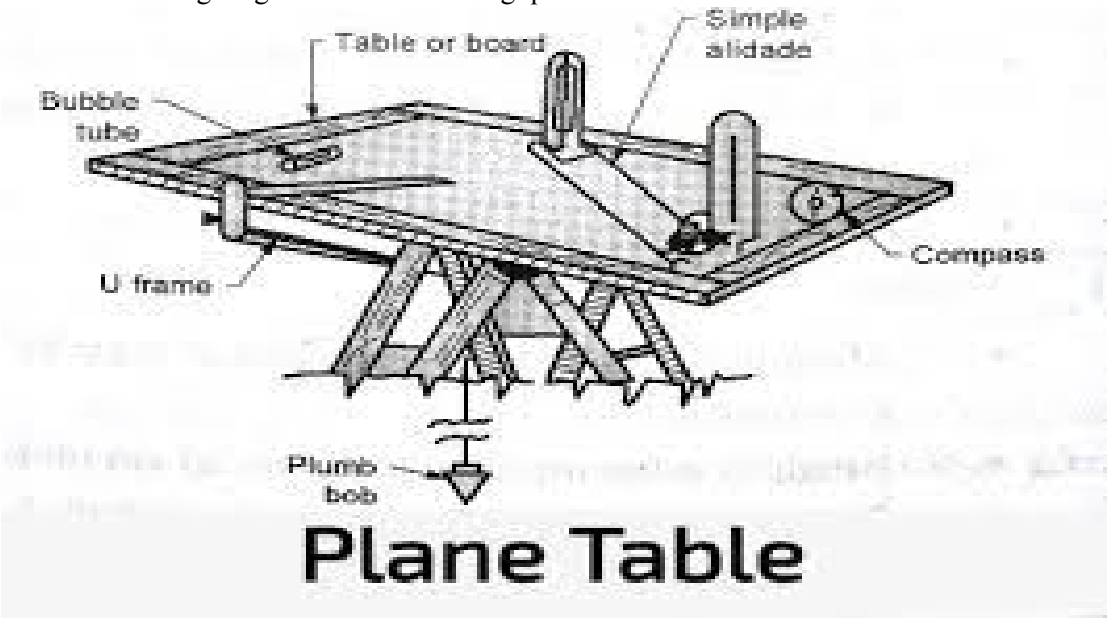
b) What is the time at place X located at 20^0E longitude when it is 2 pm at place Y at 110^0E? [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Time and Space	Origin of the earth	Determine longitude and time	Apply appropriate technology to design maps for interpretation of geographical information	Transversal Competencies	Narrative	Applying

c) "Running water consists of surface water and underground flow and the groundwater is considered equally important as the surface water." Justify with **THREE** reasons. [3]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Discuss groundwater and karst topography	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Health and Wellbeing	Geo Diversity	Analyzing

Use the following diagram while answering question 3.d. [1]



d) Explain the function of any **ONE** instrument given above.

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Time and Space	Origin of the earth	Explain concept of survey	Apply appropriate technology to design maps for interpretation of geographical information	Transversal Competencies	Narrative	Understanding

e) "Mr. Dorji is living in a cold frigid zone with temperature remaining very constantly low throughout the year." If you were Dorji what **TWO** measures would you take to keep yourself warm? [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Time and Space	Origin of the earth	Evaluate the significance of latitudes and longitudes	Apply appropriate technology to design maps for interpretation of geographical information	Health and Wellbeing	Geo Awareness	Creating

Question 4

a) "Biodiversity is essential for human existence as it provides a wide range of products and services." State any **ONE** product that biodiversity provides us. [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Ecosystem and Biodiversity	Analyze the significance of biodiversity	Analyze the impact of interactions amongst the spheres to comprehend the components of biodiversity	Sustainable Living	Geo heritage	Remembering

b) Suppose you are participating in an inter-class poster competition on the theme 'Water Resources Conservation.' Prepare and draw a poster on the given theme. [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Ecosystem and Biodiversity	Explain the components of biodiversity	Analyze the impact of interactions amongst the spheres to comprehend the components of biodiversity	Sustainable Living	Geo heritage	Applying

c) Study the given pictures and answer the question below. [2]



Do you think that Bhutanese unique culture should change with change in time? Explain.

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Ecosystem and Biodiversity	Recognize regional differences and similarities both locally and globally	Analyze the impact of interactions amongst the spheres to comprehend the components of biodiversity	Language	Geo heritage	Evaluating

d) "Wegner thought that in the beginning, the present continents were a part of bigger landmass which later got drifted." Support the given statement with **THREE** reasons. [3]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Explain the formation of Himalayan mountain system with reference to continental drift theory and plate tectonics	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Health and Wellbeing	Geo heritage	Analyzing

e) "Climate change has created lots of problems for humans and wild lives." As a responsible citizen of Bhutan, what **TWO** measures would you adopt to solve the problem of global warming? [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Discuss the impact of climatic zone on its inhabitants	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Health and Wellbeing	Geo Awareness	Creating

Question 5

a) Which of the following development had happened during the Mesozoic Era? [1]

i. Development of first flowering plants
ii. Development of first fishes

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Interpret the geological time scale	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Spirituality and Values	Geo heritage	Remembering

b) "On 21st September 2009, the earthquake of magnitude 6.1 on the richter scale occurred with its epicenter at Narang in Mongar which had caused lots of destruction to properties and lives." If you were the director of the national disaster management committee, what **TWO** mitigation measures would you initiate to reduce the risk posed by an earthquake? [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the enviro nment	Population and Impact	Suggest mitigation measures to reduce impact of disaster	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Health and Wellbeing and	Geo Awareness	Creating

c) Study the number of different scales of industries given below. [2]

Region	Large	Medium	Small	Cottage	Total
A	3	1	74	419	497
B	30	37	76	56	199
C	2	0	19	61	82
D	0	0	6	62	68
E	3	5	5	57	70
F	0	0	4	65	69
Total	38	43	184	620	985

Region A: Thimphu, Paro, Haa, Punakha, Wangdue & Gasa
Region B: Chhukha & Samtse
Region C: Sarpang, Tsirang & Dagana
Region D: Trongsa, Zhemgang & Bumthang
Region E: S Jongkhar & P Gatshel
Region F: Trashigang, T Yngtse, Mongar & Lhuntse

Source: Geography of Bhutan Class IX AND X, p.121.

Why do you think that most of the large-scale industries are located in region B? Write **TWO** reasons.

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competenc y	Blooms Level
People and the environ ment	Industry and Natural Resources of industries	Explain factors affecting location of industries	Assess the significance of natural resources to conserve the eco system for sustainability	Enterprising and Industrious	Geo heritage	Analyzing

d) Calculate the longitudinal position of a ship whose navigation officer observes that GMT is 13 hours when local time is 11 am. [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Time and Space	Origin of the earth	Determine longitude and time	Apply appropriate technology to design maps for interpretation of geographical information	Transversal Competencies	Narrative	Applying

e) Study the table below. [2]

Species diversity	**Types**	**Species found**	**Endangered Species**	**Examples**
Wild flora	Vascular plants	About 105		
	Pteridophytes:	410		
	Mushroom	Over 90		
Wild Fauna	Mammals	Over 200	27	Golden Langur, Snow Leopard, Takin, Bengal Tiger, Black Necked Crane, and Red Panda.
	Avifauna	Over 768	14	
	Invertebrates (Butterfly):	About 140		
	Fish	Over 50		

Source: Intermediate Geography Class X (Draft copy)

As a Minister of agriculture and forestry, suggest **TWO** important steps for preserving the aforementioned species diversities.

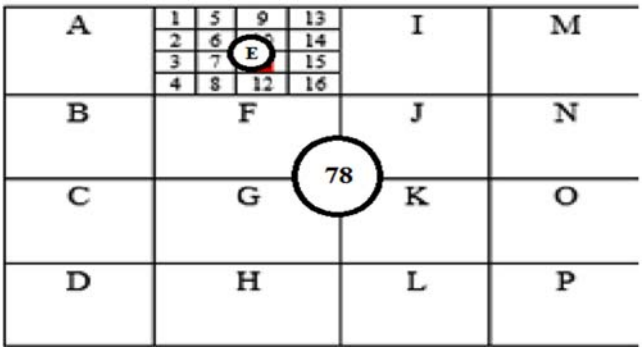
Strand	Theme	Learning Objectives	Competency	Key competenc y	Geography competency	Blooms Level
Physical Environ ment	Landfor ms	Compare climatic zones with vegetation zones of Bhutan	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Sustainabl e Living	Geo Awareness	Creating

f) Explain **ONE** cause of rapid population growth. [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Population and Impact	Discuss the causes of population growth	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Sustainable Living	Geo Awareness	Understanding

Question 6

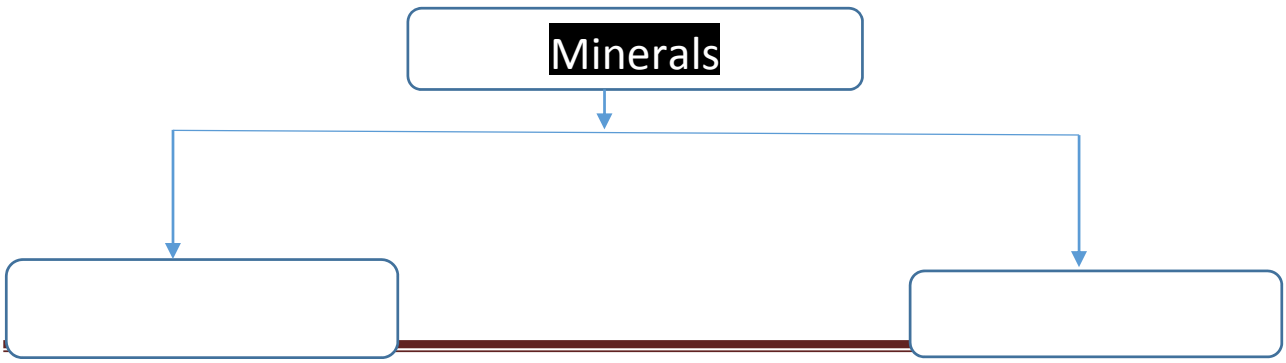
a) Use the following diagram to answer question 6.a. [1]



Write the number of the topographic map circled above?

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Time and Space	Origin of the earth	Discuss the basic techniques of layout and numbering of topographical maps	Apply appropriate technology to design maps for interpretation of geographical information	Transversal Competencies	Spatial Citizenship	Remembering

b) Fill the missing words in the flow chart below about different types of minerals. [2]



Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Industry and Natural Resources of industries	Discuss mineral resources and its distribution	Assess the significance of natural resources to conserve the eco system for sustainability	Sustainable Living	Geo heritage	Applying

c) "Global outbreak of COVID-19 has also proven to be a blessing for Bhutanese farmers." Justify with **TWO** reasons. [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Industry and Natural Resources of industries	State the importance of agriculture with reference to agro-based industries	Assess the significance of natural resources to conserve the eco system for sustainability	Enterprising and Industrious	Geo heritage	Analyzing

d) Rural-urban migration has led to many Gungtong (Empty households) in remote villages. Suggest **THREE** important ways to minimize rural-urban migration in Bhutan. [3]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Population and Impact	Explain migration and its type	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Health and Wellbeing and	Geo Awareness	Creating

e) Which disaster do you think is most common in Bhutan? Justify [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Describe common disasters in Bhutan	Analyze the impact of industries	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Health and Wellbeing	Geo Awareness	Analyzing

Question 7

a) Who coined the idea of central place theory? [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Population and Impact	Discuss spatial distribution of settlement with reference to central place theory	Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence	Enterprising and Industrious	Geo heritage	Remembering

b) Select the correct places given below and complete the missing places in the table under the different climatic zones of Bhutan. [3]

1. Massagang & Jomolhari 2. Sarpang & Samtse 3. Bumthang & Lhuentse

Climatic zone	**Places**	**Altitude**
Sub-tropical		200-2000m
Temperate		2000-3000m
Subalpine	Laya & Lingzhi	3000-4000m
Alpine		4000 and above

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Compare climatic zones with vegetation zones of Bhutan	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Language	Geo Awareness	Applying

c) Describe ecosystem. [3]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Ecosystem and Biodiversity	Compare ecosystem with biodiversity	Analyze the impact of interactions amongst the spheres to comprehend the components of biodiversity	Health and Wellbeing	Geo heritage	Understanding

d) Why is wind considered as an agent of gradation? Justify. [1]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
Physical Environment	Landforms	Discuss gradational agents and their activities	Analyze the role of places and regions in shaping the cultural identity and unifying the societies	Health and Wellbeing	Geo Diversity	Analyzing

e) Commercial or subsistence farming is important for Bhutan? Give **TWO** reasons. [2]

Strand	Theme	Learning Objectives	Competency	Key competency	Geography competency	Blooms Level
People and the environment	Industry and Natural Resources of industries	State the importance of agriculture with reference to agro-based industries	Assess the significance of natural resources to conserve the eco system for sustainability	Sustainable Living	Geo heritage	Evaluating

Test Blueprint BCSE GEOGRAPHY- 2021

Strands and chapters	Topic	Weightage	Remembering	Understanding	Applying	Analysis	Evaluation	Creating	Total Marks
Chapter Three: Topographical Map Interpretation	Map Reading and Interpretation(Top osheet)	**15**	Q1(c)-2	Q1(b)-2, Q1(d)-2	Q1(h)-2	Q1(a)-2 Q1(g)-2	Q1(e)-1, Q1(f)-2		**15**
Chapter one: Origin of the Earth	Origin of the Earth	**3**	Q1(b)i-1,Q1(b)ii-1 Q1(c)iii-1						**3**
Chapter Two: Latitudeand Longitude	Latitude and Longitude	**4**	Q1(e)i-1 Q1(e)ii-1 Q1(e)iii-1		Q1(b)iv-1				**4**
Chapter Four: The Interior of the Earth	The Interior of the Earth	**5**	Q1(c)i-1 Q1(c)ii-1 Q1(c)iii-1 Q1(c)iv-1 Q1(c)v-1						**5**
Chapter Five: Gradation	Gradation	**3**	Q1(e)iv-1 Q1(d)ii-1 Q1(d)v-1						**3**
Chapter Six: Climate andVegetation of Bhutan	Climate and Vegetation ofBhutan	**1**		Q1(d)-i-1					**1**
Chapter Seven: Biodiversity	Biodiversity	**1**	Q1(d)iii-1						**1**
Chapter Nine: Population Growth	Population Growth	**1**	Q1(d)iv-1						**1**
Chapter Ten: Settlement	Settlement	**1**			Q1(b)v-1				**1**
Chapter Eleven: Industries		**1**		Q1(e)v-1					**1**
Map Works	Map of Asia	**5**			**Q9-5**				**5**
	Map of South Asia	**5**			**Q10-5**				**5**
	Map of Bhutan	**5**			**Q11-5**				**5**
Total		**50**	**18**	**6**	**19**	**4**	**3**		**50**

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Chapter Nine: Population Growth	Population Growth	**1**	Q1(d)iv-1						**1**
Chapter Ten: Settlement	Settlement	**1**			Q1(b)v-1				**1**
Chapter Eleven: Industries		**1**		Q1(e)v-1					**1**
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HISTORY

BCSE HISTORY SPECIMEN PAPER
SECTION A (40 MARKS)
ANSWER ALL QUESTIONS

a) For each question, there are four alternatives: A, B, C and D. Choose ONE correct alternative and circle it. If there are more than ONE choice circled, NO score will be awarded. [5]

i. Which of the following is **NOT** true about Bhutan and British India relationship?

A British showed interest in Bhutan due to the fertile Duar regions.
B British wanted to establish trade route with Nepal through Bhutan.
C Bhutanese raided Ngogong (Assam) and took away nine captives.
D British occupied Assam and began to share a common border with Bhutan.

ii. The Druk Gyalpo Jigme Khesar Namgyel Wangchuck is known as the people's King because

A of constitutional democracy.
B His Majesty is known to the people.
C of people's infinite love and affection.
D of His Majesty's undying love and service for the people.

iii. Which **ONE** of the following is the most correct reason to launch the project on planned population growth by Druk Gyalpo Jigme Singye Wangchuck in 1990?

A promote economic development
B create awareness on the health and hygiene
C educate people to secure better living conditions
D promote sustainable development in the country

iv. All the following are true about medieval Historiography **EXCEPT**

A The medieval historians were the last ones to present all human beings having a role in historical events as planned by God.
B The idea of writing history in a chronological framework was started by medieval historians.
C The medieval historians recognized the role of fate and destiny in understanding historical events.
D Medieval historiography established the idea of writing history as universal history instead of only writing about a particular place like the Greeks and Romans.

v. The image best describes Lord Buddha's

A Parinirvana.

B Enlightenment.

C Great Renunciation.

D Sangha: The Monastic order.

b) Write TRUE or FALSE against each statement given below. [10]

i. The Druk Gyalpo Jigme Singye Wangchuck became the youngest leader at the age of 18 years.

ii. Had Zhabdrung not have a dispute with Tsang Desi in Tibet, he would not have come to Bhutan.

iii. One of the objectives of DeSuung programme is to enhance the sense of volunteerism.

iv. Pemberton Mission's route was same from those of the earlier missions to enable them to discover more about the country, Bhutan.

v. The idea and origin of civil society started only after the establishment of Loden Foundation in Bhutan.

vi. The medieval historians were the first ones to present all human beings having a role in historical events as planned by God.

vii. Sangha, the monastic order established by Buddha is also known as the non-democratic monastic community.

viii. One of the important activities in school is taking care of school's natural environment and planting trees whenever possible. These cater to the fulfilment of article 4 of the constitution of Bhutan.

ix. The lessons on socio-cultural practices of the past enable us to analyse the existing practices and beliefs and explore adoption of new principles that suit the changing conditions.

x. Zhabdrung Ngawang Namgyel codified laws in the 16th century that resulted in internal feuds and chaos.

c)	**Fill in the blank with an appropriate word(s).**	[10]
i.	Bhutan's recognition as one of the biological hotspots in the world is credited to Druk Gyalpo _____for initiating the noble idea of preserving environment in the country.	
ii.	Under the dynamic leadership of His Majesty the King, _____ was established to hold and manage the existing and future investments of our country foe long term benefit of people.	
iii.	Tourists visiting our country express their love and affection for our decorated national dress. We owe _____ for blessing with the unique identity.	
iv.	Bhutan's first major contact with British India was in 1772 during the reign of Desi _____.	
v.	The three-phase journey of lord Buddha's Englightenment include, mastering the art of meditation, _____, and the middle path.	
vi.	The age of _____ led to the exploration of the world by the Europeans.	
vii.	The year 1981 and 1991 is important in the history of Bhutan as Bhutan, under the dynamic leadership of the fourth Druk Gyalpo Jigme Singye Wangchuck, laid the foundation for _____.	
viii.	The death of Zhabdrung was kept secret due to the absence of an _____.	
ix.	Zhabdrung _____ is observed on the 10th day of the third Bhutanese month every year as it marks the day when Zhabdrung Ngawang Namgyal passed away at the Punakha Dzong in 1651.	
x.	The song 'Tendrel Zangso…' was played as a ringtone in every Bhutanese phones to rejoice the birth of Prince Jigme Namgyel. This was because Bhutanese were assured with continuity of love and blessing from _____ dynasty.	

d) Match the descriptions given in column A correctly against the appropriate term given in column B and write the matching pairs in the space provided.			[5]
a.	Enthusiasm in European nations such as Portugal and Spain in finding the alternative route	Age of Exploration	
b.	Religion that was a theme for writing of history in medieval Europe.	Renaissance	

c. Promulgation of the first set of Bhutnaese laws	Buddhism	
d. Developing and strengthening leadership skills in people.	Christianity	
e. Empowering power and responsibility to people	Druk Gyalpo Jigme Singye Wangchuck	
	Druk Gyalpo Jigme Khesar Namgyel Wangchuck	
e) Answer the following questions briefly:		
a. Construct a timeline for the contributions of the Fourth Gyalpo as the crown prince		[2]
b. Discuss the significance of the 'Royal Walk' after the royal wedding of 2011.		[2]
c. Do you think Desi Zhidar's contribution in context to Bhutan and British-India relation was significant to Bhutan?		[2]
d. Assessing the importance of Article 5 of the constitution of Bhutan, draw **TWO** provisions to maintain your school property in line with the Article 5.		[2]
e. Formulate ONE important feature town planning that you wish to see in your town with reference to the town planning of Indus Valley Civilization.		[2]
BCSE HISTORY SPECIMEN PAPER **SECTION B (60 MARKS)** **ANSWER ALL QUESTIONS**		
Question 2 a. Examine any TWO contributions of Druk Gyalpo Jigme Singye Wangchuck in context to fulfilment of the sacred prophesy of Guru Rinpoche. (4)		
b. Discuss any THREE initiatives of His Majesty the King in safeguarding the national security of the country. (6)		

Question 3 a. Explain the impact of laws codified by Zhabdrung Ngawang Namgyal and how does it contribute towards social cohesion in our daily lives. (6)	
b. Develop a proposal for any Civil Society Organization you wish to undertake in future. Your proposal must outline FOUR characteristics of the Civil Society. (4)	
Question 4 a. Under the terms of the treaty of Sinchula, Bhutan ceded the territories of Assam and Bengal Duars. In return, Bhutan received the annual subsidy of 50,000 rupees. Evaluate if the term in the treaty was in favour of Bhutan or British India. (5)	
b. Article 3 and 4 in the constitution of Bhutan places importance on culture heritage of our country. Appraise the importance of Cultural Heritage with reference to your school culture. (5)	
Question 5 a. Discuss the pride of being a Bhutanese under the selfless leadership of the fourth Druk Gyalpo Jigme Singye Wangchuck in context to his selfless leadership of 2006. (4)	
b. Choose any THREE of the initiatives of our beloved Druk Gyalpo and explain how these have helped to the welfare of the people. (6)	
Question 6 a. Create a plan to conduct a research on any topic in your village. You plan must refer to the processes of conducting oral history research. (5)	
b. Do you agree that the invention of wheel by Sumerian is the most important invention? Justify your answers with FIVE reasons.	
Question 7 a. Describe Buddha as an icon of socio-cultural awakening with reference to any ONE episode of your life. (5)	
b. Examine how the age of enlightenment led to exploration of the world by the Europeans. (5)	

History
Class X Table of Specification
Section A: 40 Marks

Section	Chapter	Weighting	Marks	Rem	Und	App	Ana	Eva	Crea	Marks
Bhutan History and Civics Citizenship Education	Druk Gyalpo Jigme Singye Wangchuck	15	7	TF1(1)	FIB7(1)	FIB1(1) MI5(1)	MCQ3(1)		SAQ1(2)	7
	Druk Gyalpo Jigme Khesar Namgyel Wangchuck	20	8	FIB2(1)	MCQ2(1) SAQ2(2)	MI4(1) TF3(1)	FIB10(1) MCQ5(1)			8
	Choegyal Zhabdrung Ngawang Namgyal – *The Architect of the Na on State Palden Druk*	12	6	MI3(1)	TF2(1)	FIB3(1) FIB8(1)	TF10(1)	FIB9(10)		6
	Bhutan and British India: Bhutan's Relations with Her Immediate Foreign Neighbor	10	5		SAQ3(2)	TF4(1)	FIB4(1) MCQ1(1)			5
	Civil Society	5	1			TF5(1)				1
	Constitution of Bhutan	8	3			SAQ4(2)	TF8(1)			3
World History	Medieval Historiography	8	3		MI2(1)	MCQ4(1)	TF6(1)			3
	Indus Valley Civilisation	7	2						SAQ5(2)	2
	Age of Exploration	8	3		TF7(1)	FIB6(1)	MI1(1)			3
	Socio-Cultural Movement	7	2		FIB5(1)		TF9(1)			2
				3	10	12	10	1	4	**40**

History
Class X Table of Specification
Section B: 60 Marks

Section	Chapter	Weighting	Marks	Rem	Und	App	Ana	Eva	Crea	Marks
Bhutan History and Civics Citizenship Education	Druk Gyalpo Jigme Singye Wangchuck	15	8		4a(4)		1a(4)			8
	Druk Gyalpo Jigme Khesar Namgyel Wangchuck	20	12		1b(6)	4b(6)				12
	Choegyal Zhabdrung Ngawang Namgyal – *The Architect of the Na on State Palden Druk*	12	6			2a(6)				6
	Bhutan and British India: Bhutan's Relations with Her Immediate Foreign Neighbour	10	5					3a(5)		5
	Civil Society	5	4						2b(4)	4
	Constitution of Bhutan	8	5				3b(5)			5
World History	Medieval Historiography	8	5						5a(5)	5
	Indus Valley Civilisation	7	5					5b(5)		5
	Age of Exploration	8	5				6b(5)			5
	Socio-Cultural Movement	7	5		6a(5)					5
					15	12	14	10	9	**60**

TVET

COMPETENCY BASED ASSESSMENT THROUGH COMPETENCY BASED TEST ITEMS

School-based TVET

INTRODUCTION

1. Subject background

Technical and Vocational Education and Training (TVET) means education and training which provides knowledge and skills for employment. It comprises of education, training and skills development related to a wide range of occupational fields, production, services and livelihood.

With the collaborative efforts of Ministry of Labour and Human Resources and Ministry of Education, Vocational Curriculum has been introduced in the schools with the assistance from TTIs/IZC since 2011. Later in 2020, the technical/vocational courses offered by the TTIs/IZCs are adapted and offered in schools aligning to NC2/3.

With the opportunity to choose TVET as optional subjects from classes IX to XII and credit transfer system, there is a provision of alternative pathways in schools and in the tertiary education systems. This would enable the students to get skilled and meet the growing demand for technical skills in the country besides acquiring academic/technical qualifications.

2. Goals and purpose of the subject

The introduction of TVET in the school education system will:

- provide an alternative pathway of TVET to children through diversification of subjects that facilitate students to study the subjects of their interest and aptitude and build a foundation for higher technical/vocational training courses.
- contribute to building skilled human resources to meet the national demand.
- empower students to recognise their potential and pursue technical/vocational courses for gainful and self-employment, acquiring employability skills for an effective transition from school to work.
- promote dignity of labour, work ethic and positive attitude towards technical/vocational professions, for nation's self-reliance.

3. Broad Learning outcomes / Competencies

The broad learning outcomes/competencies as per content coverage in different TVET subjects are:

- Apply knowledge and skills in various situations (under guidance or with varying degree of responsibility)
- Carry out the tasks/processes in various contexts (known, familiar and unfamiliar contexts)
- Generate ideas and provide a range of responses or solutions to address the familiar/unfamiliar problems.
- Be disciplined in thought and action by being honest, diligent and respectful without getting settled for complacency, mediocracy and indifference.
- Communicate effectively and market the products.
- Carry out new ventures meticulously and sensibly in collaboration with others.
- Exhibit multiple ideas and practical skills to succeed in life.
- Practise efficient use of resources contributing to sustainable living.
- Promote health and wellbeing through fulfilling business ventures that can bring positive change in the society.
- Keep abreast of the new technological development and mechanise the tasks for better outputs/products.

4. Salient Learning experiences

The students will acquire hands-on experiences on the chosen TVET trade backed up with required theoretical knowledge. They will also learn and practice entrepreneurial skills and imbibe required values.

5. Purpose of the Assessment

The main purpose of assessment is to enable the students achieve the competencies set in the curriculum framework, supported through effective teaching/training, monitoring and feedback. The various forms of assessment can track the progress of the students and accordingly render necessary interventions.

6. Question types used and their underpinning principles or big ideas

The types of questions used are Multiple Choice Questions (MCQ), Short Response Question (SRQ) and Extended Response Questions (ERQ). Unlike the past practice, the questions will be competency based thereby testing the authentic learning of the students instead of merely testing the content knowledge. The sample questions are provided just for reference, so as to help the instructors frame such questions for different subjects without limiting to the prescribed content.

Unlike the conventional practice of framing the same questions to check certain concepts, competency based questions can be set differently in various contexts.

SAMPLE COMPETENCY BASED TEST ITEMS

There are two Sections in this paper, Section A and Section B. Both the sections are compulsory questions.
Total/Full Marks: 50
Time for writing the examination: 1 hour

SECTION A [30 MARKS]
ANSWER **ALL** QUESTIONS

Question 1 **[10]**

a. Directions: For each question, there are four alternatives **A, B, C and D**. Choose the correct alternative and circle it. **Do not** circle more than **ONE** alternative. If there are more than one circled, **NO** score will be awarded.

i. Which of the following phases of 5S is carried out after arranging tools, materials and equipment?

A Set
B Sort
C Shine
D Sustain

Chapter	**Learning Objective**	**Key Competency**	**Bloom's Level**
4. Verifying AC circuit	Recall the sequence of 5S	Affective	Remembering

ii. Pema safely uses a material to touch an electric field and it completely resists the flow of electric change because it is an

A insulator
B inductor
C conductor
D semiconductor

Chapter	**Learning Objective**	**Key Competency**	**Bloom's Level**

4. Verifying AC circuit	Identify an insulator through its characteristics	Cognitive	Understanding	

iii. If the voltage and the current of an AC circuit is in phase with each other, the phase difference between voltage and current will be

A zero.
B positive.
C negative.
D positive and negative simultaneously.

Chapter	**Learning Objective**	**Key Competency**	**Bloom's Level**
4. Verifying AC circuit	Use the characteristics of capacitive circuit for derivation	Cognitive	Applying

iv. In the LC series circuit, if the value of the inductive reactance is greater than that of capacitive reactance, the circuit will become a

A pure inductive circuit.
B purely resistive circuit.
C normal electrical circuit.
D purely capacitive circuit.

Chapter	**Learning Objective**	**Key Competency**	**Bloom's Level**
4. Verifying AC circuit	Explain what would happen when the value of inductive reactance is greater than capacitive reactance	Cognitive	Understanding

v. A purely capacitive circuit has a reactance of C ohm at 50Hz. If the frequency is doubled, the capacitive reactance

A becomes zero.
B becomes double.

C remains constant.
D reduces to half its value.

Chapter	Learning Objective	Key Competency	Bloom's Level
4. Verifying AC circuit	Determine the capacitive reactance with a given condition	Cognitive	Applying

b. Match each prefix under Column I to the response in Column II. [5]

Column I	Column II
1. Henry	a) When $X_L=X_C$
2. Capacitor	b) It stores energy in the form of electric charge
3. Resonance frequency	c) It is the reciprocal of reactance.
4. Conductance	d) It is the reciprocal of resistance
5. Parallel circuit	e) Unit of capacitor
	f) Unit of inductor
	g) Voltage remains same.

c. Fill in the blanks with appropriate word(s). [10]

i. LC series circuit is also known as_____.

ii. The power factor of inductive circuit is_____.

iii. In a 20 Vac series RC circuit, if 20 V is read across the resistor and 40 V is measured across the capacitor, the applied voltage is _____.

iv. Frequency of the circuit is _____ proportional to inductance of the circuit.

v. The diode in half wave rectifier has a forward resistance RF. The voltage is $V_m \sin\omega t$ and the load resistance is RL. The DC current is given by……..

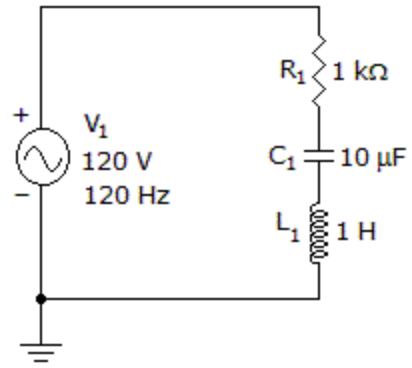
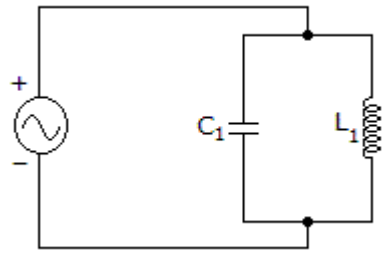
vi. A heat dependent resistor is known as _____thermistor, its resistance decreases as the temperature_____

vii. On discharging a capacitor, current _____exponentially.

viii. In a delta-connected load, the line voltage is _____to the phase voltage.

ix. Ripple factor of half wave rectifier is _____.

d. Write **True** or **False** against each sentence. [5]

i.	In a purely resistive, the average power P_{av} is one half-of the peak power $P_{max.}$	T
ii.	In a series *RL* circuit, a power factor of 0.5 results in less energy conversion to heat than does a power factor of 0.6.	T
iii.	The impedance is 1117 Ω.  	F
iv.	If the resistance in parallel with a parallel resonant circuit is reduced, the bandwidth increases.	F
v.	Resonance will occur when $X_C = X_L$ in the circuit below.  	T
	SECTION B [20 MARKS] ANSWER **ALL** QUESTIONS	
Question 2		
i.	Draw vector diagram of pure resistive circuit and label two parts.	[2]
ii.	State two purposes of RL series circuit.	[2]
iii.	How does phase sequence determine the direction of the rotor?	[2]
iv.	How does load decide if a system is balanced or unbalanced?	[2]
v.	How is delta connection used in rotary converters?	[2]
Question 3		[10]

i.	The phase sequence of a three phase system is RYB. Examine the other possible sequence.	[1]
ii.	How is delta load connection different from star connection?	[1]
iii.	How is filter circuit used in noise rejection? Explain with **TWO** points.	[2]
iv.	Explain how the voltage regulator functions in keeping voltages within the prescribed range.	[2]
v.	A circuit is the combination of a resistor and capacitor connected in parallel to an AC source. Create the circuit described above showing the current flow through the resistor and the capacitor.	[2]
vi.	If you are asked to choose half wave rectifier or full wave rectifier, which one would you prefer considering its efficiency? Justify with TWO points.	[2]