



**COMPETENCY BASED ASSESSMENT TEST**

STUDENT NAME: \_\_\_\_\_ ROLL NO: \_\_\_\_\_

SCHOOL NAME: \_\_\_\_\_ SECTION: \_\_\_\_\_

DZONGKHAG: \_\_\_\_\_ GENDER: \_\_\_\_\_

**SCIENCE**

Reading Time: 15 Minutes

Full Marks: 50

Writing Time: 1 Hour

Year: 2021

**For teacher's use only**

Question	Q1	Q2	Q3	Q4	Q5				Q6			Q7				
					a.i	a.ii	a.iii	b	a	b	c	a.i	a.ii	b	c	
Mark	5	5	5	5	1	1	2	2	2	2	2	2	1	2	2	1
Mark scored																
Total Score																

Question	Q8						Q9		
	a	b.i	b.ii	c	d	e	a	b	c
Mark	1	1	1	1	1	1	2	2	2
Mark scored									
Total Score									
Final Score									

**IMPORTANT: Turn over to read instructions.**

## **READ THE FOLLOWING INSTRUCTIONS CAREFULLY:**

1. In this booklet you will find **NINE** questions. You must answer **ALL** the questions.
2. Answers to all the questions must be written neatly in the spaces provided.
3. Do not write during the first fifteen minutes. This time is to be spent on reading the questions.
4. You will have **ONE** hour to answer all the questions.
5. You will **NOT** be allowed to leave the examination room until the completion of the stipulated time.

(First **FIFTEEN** minutes could be used by the teachers on duty to explain the instructions)

## Section A (20 Marks)

### Question 1

[5]

**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 are more than one choice circled, NO score will be awarded.**

i. After a theory class on classification and variation, a student collected information on animals from the library as given in the table.

Group A	Group B	Group C	Group D
Trout	Sparrow	Anaconda	Toad
Shark	Crow	Viper	Salamander

In the above table, the sequence of animal classification from A to D represents

- A fishes, birds, amphibians and reptiles.
- B reptiles, amphibians, fishes and birds.
- C birds, fishes, reptiles and amphibians.
- D fishes, birds, reptiles and amphibians.

ii. Study the diagram given below and answer the question.



Oroxylum



Dandelion

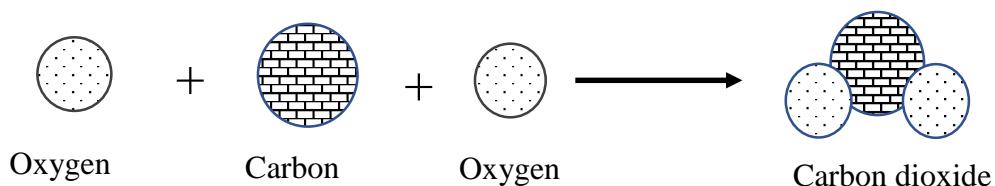
The most appropriate agent of seed dispersal in these plants is

- A wind.
- B water.
- C insects.
- D animals.

iii. A goldsmith dipped a ring in a certain solution. After an hour, the ring became shiny and clean. The nature of the solution used by the goldsmith to clean the gold ring is

- A a basic solution.
- B an acidic solution.
- C a neutral solution.
- D an amphoteric solution.

iv. Study the visual representation of a chemical combination of atoms.



Which of the following is the correct combination of the atoms in the above chemical reaction?

- A 1 atom of carbon combines with 2 atoms of oxygen to produce 1 molecule of carbon dioxide.
- B 2 atoms of carbon combine with 1 atom of oxygen to produce 1 molecule of carbon dioxide.
- C 1 atom of carbon combines with 1 atom of oxygen to produce 1 molecule of carbon dioxide.
- D 2 atoms of carbon combine with 1 atom of oxygen to produce 2 molecules of carbon dioxide.

v. While travelling from Laya to Phuentsholing, Sonam's weight increased. Which of the following would you choose in order to explain to Sonam about the changes in his weight?

- I. increase in gravity
- II. decrease in gravity
- III. increase in altitude
- IV. decrease in altitude

- A I and III
- B II and IV
- C I and IV
- D II and III

## Question 2

[5]

**Direction: Fill in the blanks with appropriate words.**

- i. The streamlined body of airplanes helps to reduce air \_\_\_\_\_.
- ii. People keep indoor plants in their rooms. This helps to purify the air through the process of \_\_\_\_\_.
- iii. We need to wash water boilers frequently to remove the white coatings formed due to the deposition of calcium and \_\_\_\_\_ salts.
- iv. A mixture of cooking oil and water can be separated by using \_\_\_\_\_.
- v. A rolling stone possess \_\_\_\_\_ energy.

**Question 3****[5]**

**Direction: 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.**

Column I	Column II
i Tearing a piece of meat	a virtual image
ii Scattering of seeds to different places	b rubber
iii Mixture of <i>ara</i> and water	c premolars
iv Insulating electrical wires	d canine
v Rear mirror of the car	e distillation
	f dispersal

i	
ii	
iii	
iv	
v	

**Question 4****[5]****Direction: Write TRUE or FALSE against each statement in the space provided.**

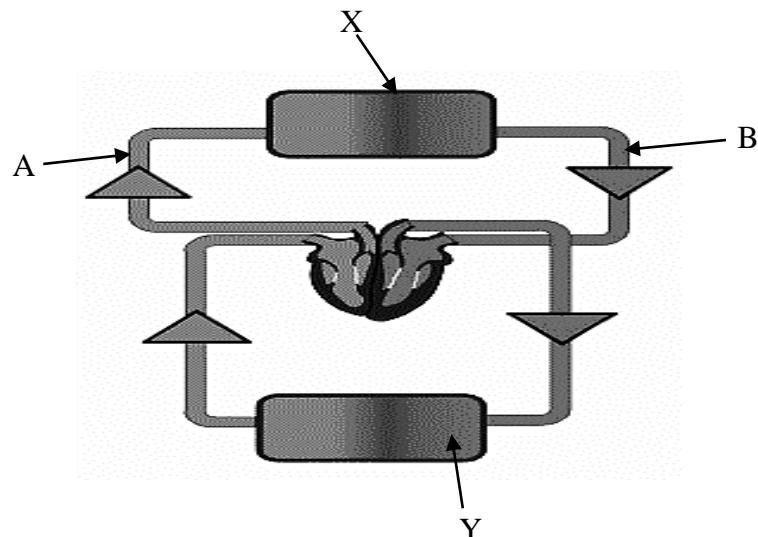
- i. Generally, patients are advised to consume more fruits and vegetables as these are protective foods. (\_\_\_\_\_)
- ii. For the development of an eco-pond, the group of plants you would choose is lithophytes. (\_\_\_\_\_)
- iii. The sound produced by a guitar is due to the vibration of air.  
(\_\_\_\_\_)
- iv. A place on the Earth experiences continuous sunlight for more than 24 hours. This phenomenon is called polar day. (\_\_\_\_\_)
- v. When the Earth comes in a straight line between the Sun and the Moon, solar eclipse occurs. (\_\_\_\_\_)

## Section B (30 Marks)

**Direction:** Answer the following questions in the spaces provided. The marks for each question are given in the brackets [ ].

### Question 5 [6]

a. Study the schematic diagram of the human circulatory system given below and answer the questions that follow.



i. Identify the type of blood flowing through blood vessels A and B. [1]


ii. Name the parts labelled X and Y in the diagram. [1]


iii. Identify the **TWO** types of circulation shown in the diagram. [2]


b. Green leaves are called '*food factories*' of a plant. Justify.

[2]


**Question 6 [6]**

a. A farmer transplanted eggplants on a plot of land. After two months, some plants became weak and their stems turned purple, while others developed yellow leaves. Which **TWO** nutrients would you suggest to the farmer to use to address such an issue?

[2]


b. Camels have padded feet which enable them to walk on sand. Write any other **TWO** characteristics which help them to survive in the desert.

[2]


c. A list of organisms is provided below. Construct a food pyramid and place the organisms in their respective levels. [2]

*grasshopper, broccoli, hawk, sparrow,*

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**Question 7 [6]**

a. A list of symbols of elements are given below.

**S, Mg, Na, Ca, Au, C, Hg, Ag**

i. Choose the symbols of elements for sodium, gold, mercury and calcium from the list. [2]


ii. Universal indicator is preferred over litmus indicator. Why? [1]



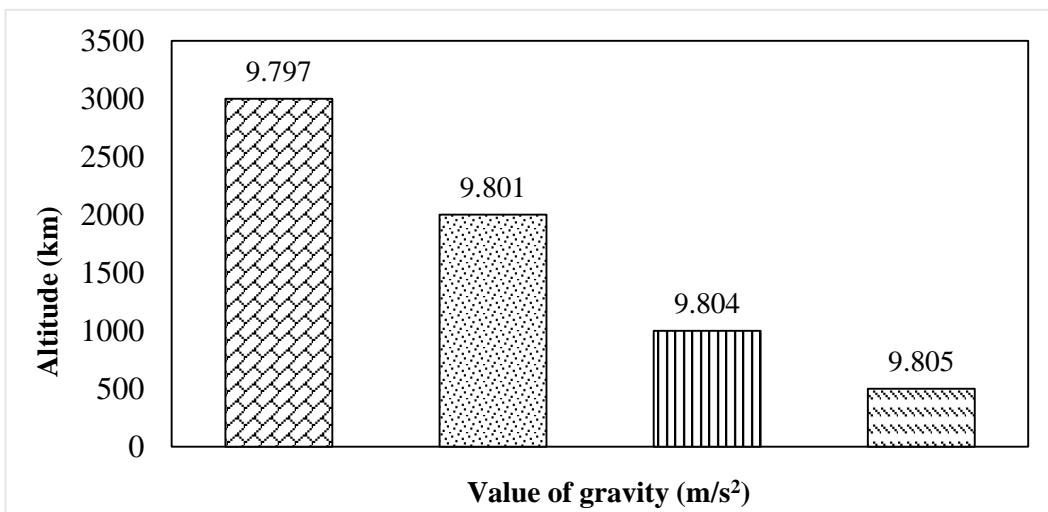
b. During photosynthesis, green plants prepare their own food using carbon dioxide [2] and water in the presence of sunlight and chlorophyll. What change is it? Justify.


c. ORS is provided to treat diarrhoea. Name the solute and solvent that you would use [1] to prepare ORS at home.


### Question 8 [6]

a. A woman uses a winnow at her house to separate a mixture. What are the [1] characteristics of the components in the mixture which can be separated by winnowing?


b. Study the following graph and answer the questions that follow.



i. What is the relationship between altitude and gravity?

[1]


ii. What is the approximate value of gravity when the altitude is 2000 kilometers?

[1]


c. Explain the energy conversion taking place when the television is turned on.

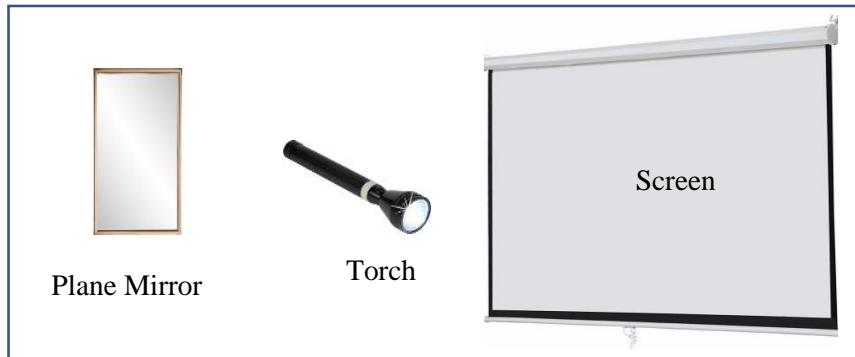
[1]


d. Magnets are used in different appliances. Mention any **TWO** devices where magnets are used. [1]


e. In cold places, it is better to grow vegetables inside a greenhouse. Justify with **TWO** reasons. [1]

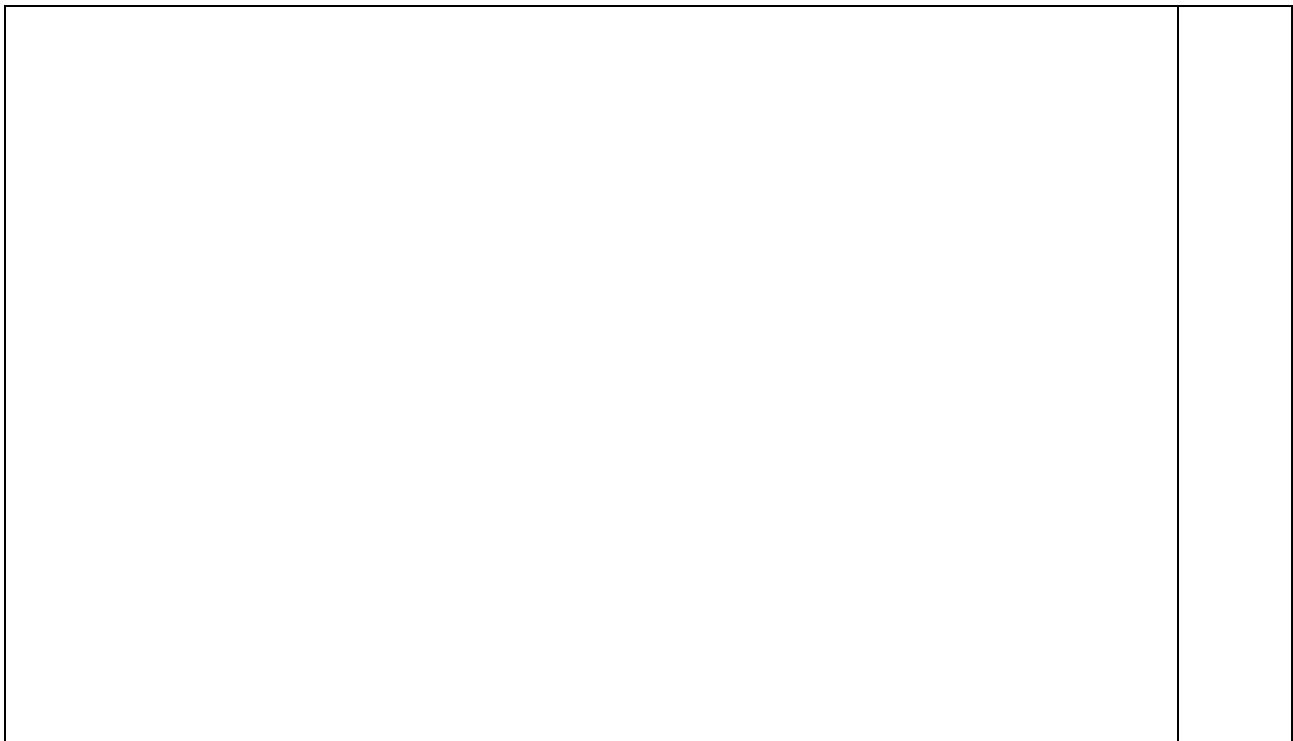

### Question 9 [6]

a. Design an experiment to demonstrate **ONE** of the properties of light using the following materials. [2]



b. Mention **TWO** conditions which make it difficult for people to settle on the Moon. [2]


c. Draw a model of the Earth and label the equator, axis, north pole and south pole. [2]

A large, empty rectangular box with a thin black border, occupying most of the page below the question. It is intended for the student to draw a model of the Earth, including the equator, axis, north pole, and south pole.