

COMPETENCY BASED ASSESSMENT TEST

STUDENT NAME : _____

ROLL NO : _____

SCHOOL NAME : _____

SECTION : _____

DZONGKHAG : _____

GENDER : _____

SCIENCE

Reading Time: 15 Minutes

Full Marks: 100

Writing Time: 2 Hours

Year: 2019

For Teachers' use only

Question	Q1	Q2	Q3	Q4	Q5						Q6						Q7
					a	b	ci	cii	di	dii	a	bi	bii	ci	cii	d	
Mark	25	10	10	10	2	2	1	1	2	1	2	1	1	1	1	2	2
Mark scored																	
Initial																	
Total																	

Question	Q7				Q8						Q9						
	b	ci	cii	d	a	b	bii	biii	c	d	a	bi	bii	c	di	dii	
Mark	2	1	1	3	2	1	1	1	1	3	2	1	2	1	2	1	
Mark scored																	
Initial																	
Total																	
Final score:																	
Initial of the tabulator:																	

This booklet contains 26 pages

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 **TWO** hours to answer all the questions.
5. You will be allowed to leave the examination room only half-an-hour before the completion of the stipulated time.

Question 1**[25]**

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. Which of the following substances is acidic in nature?

- A soap
- B tooth paste
- C ash solution
- D tomato juice

ii. Study the data given in the table below and answer the question.

Water sample	Height of lather in cm
mineral water	1.4
rain water	5.1
river water	2.1
boiled water	4.8

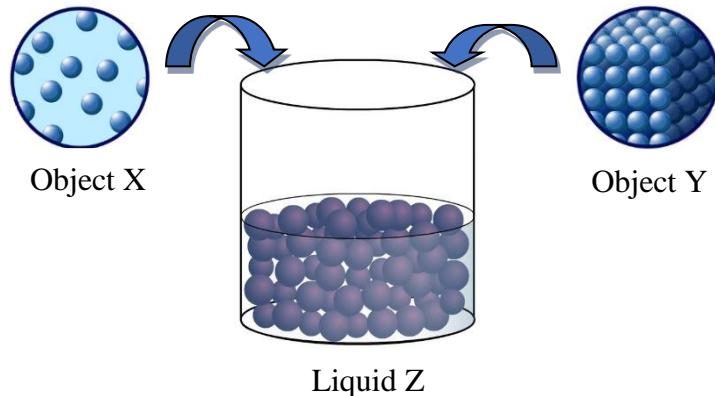
Which water samples are soft water?

- A rain water and boiled water
- B mineral water and rain water
- C river water and boiled water
- D mineral water and river water

iii. Which of the following statements is **TRUE** about Earth?

- A Earth rotates around the Sun.
- B Earth revolves about its axis.
- C Earth revolves around the Sun.
- D Earth revolves around the Moon.

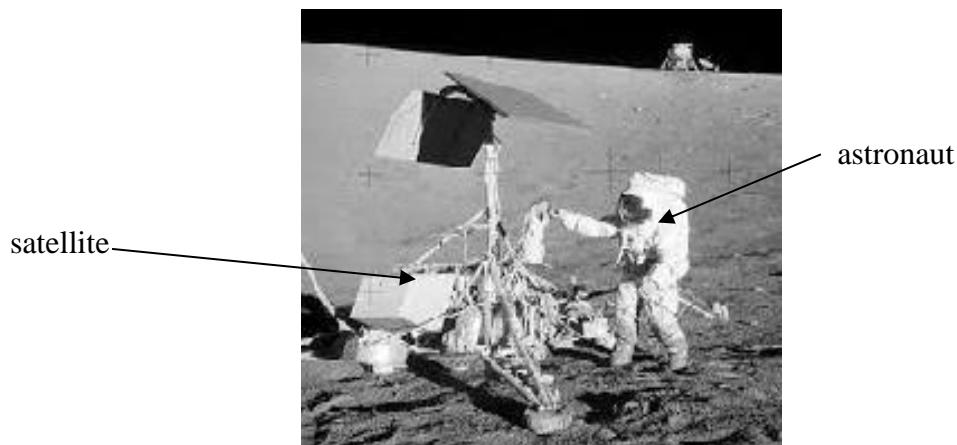
iv. Study the diagram given below and answer the question.



Which of the following statements is **TRUE**?

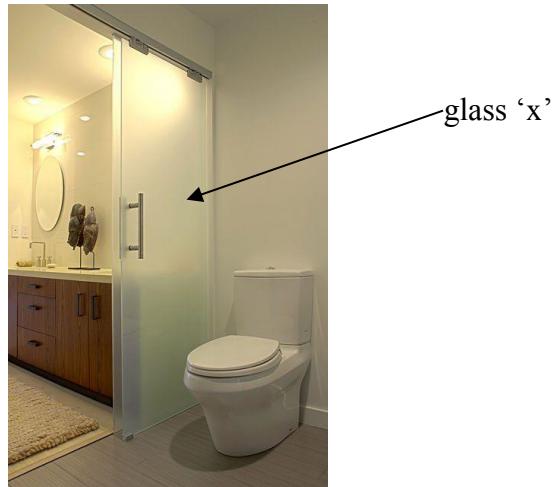
- A Object X will sink in liquid Z.
- B Object X will float in liquid Z.
- C Object Y will float in liquid Z.
- D Both objects X and Y will sink in liquid Z.

v. An astronaut weighing 70 kgf lands on the Moon to launch a satellite of 50 kgf to study the possibilities of life on the Moon. What would be the total weight of the astronaut and the satellite on the Moon?



- A 10 kgf
- B 20 kgf
- C 30 kgf
- D 40 kgf

vi. Identify the property of glass 'x' that makes it suitable for bathroom doors.



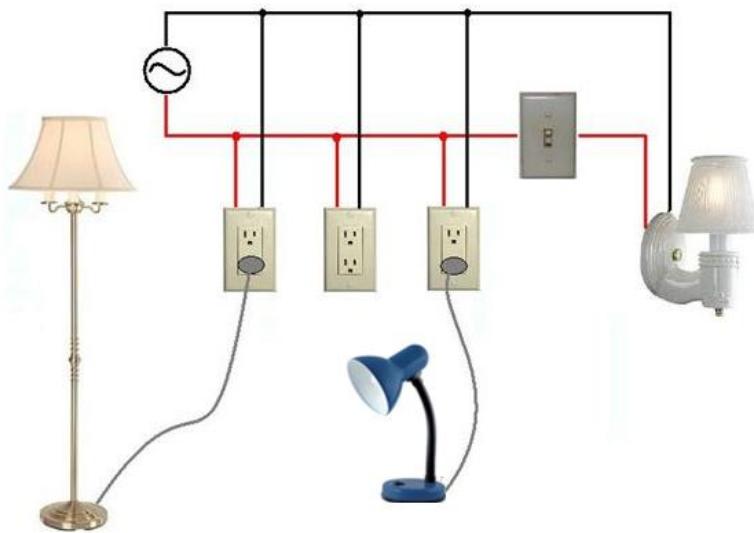
- A It reflects light.
- B It allows most light to pass through it.
- C It allows part of light to pass through it.
- D It does not allow light to pass through it.

vii. Karma's weight increased when he travelled from Gasa to Gelephu. Upon investigation, he learnt that it was due to the

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

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

viii. Study the circuit given below.



In the above circuit, all the bulbs glow with equal brightness. What are the reasons for it?

- I It is a series circuit.
- II It is a parallel circuit.
- III Each bulb has its own circuit.
- IV All the bulbs receive equal voltage.

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

ix. A farmer wants to increase the size of apples in his orchard. What primary nutrient must he add to the soil?

- A calcium
- B nitrogen
- C potassium
- D phosphorus

x. Which one of the following human activities would help to protect and conserve the natural habitats?



I

II

III

IV

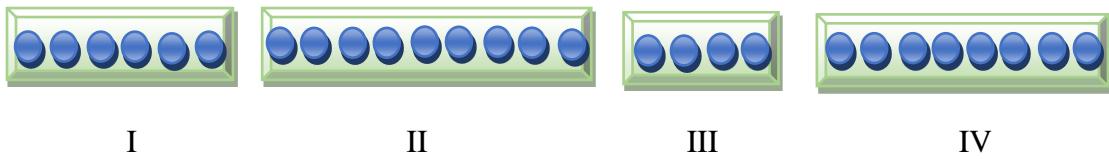
A I

B II

C III

D IV

xi. The following diagrams represent different levels of a food chain pyramid.



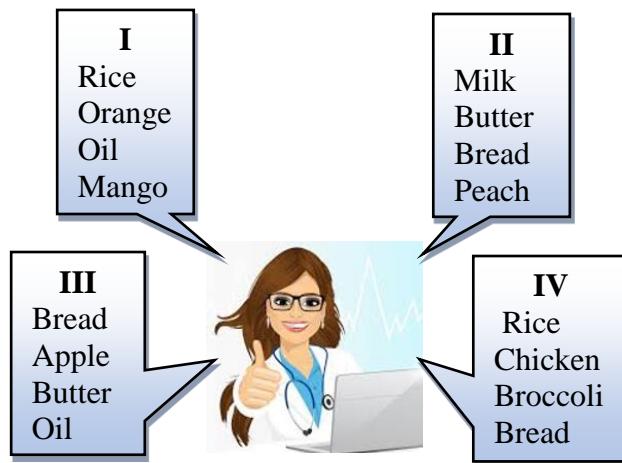
In the above diagram, level I represents

A producers.
B tertiary consumers.
C primary consumers.
D secondary consumers.

xii. What would happen if there is no evaporation?

A There will be no water cycle.
B There will be no life on Earth.
C There will be floods everywhere.
D We will experience air pollution.

xiii. As a doctor, which of the following types of food would you advise to eat?



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

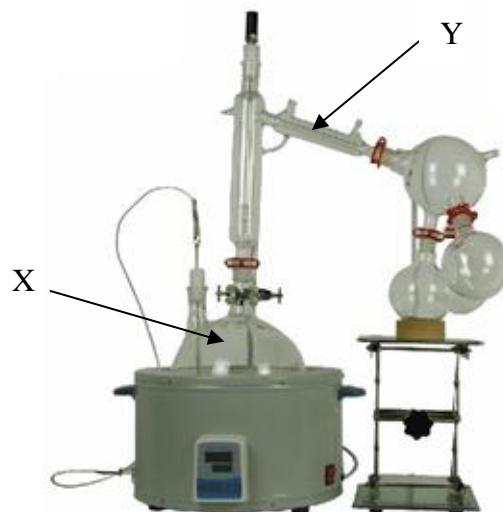
xiv. In the process of making dumplings, a rolling pin is used to roll the dough as shown below.



The simple machine used is

- A gear.
- B lever.
- C pulley.
- D wheel and axle.

xv. The distillation method is used for making hard water into soft water.



Which one of the following processes takes place in parts X and Y?

- A freezing and evaporation
- B vaporization and sublimation
- C evaporation and condensation
- D sublimation and condensation

xvi. Based on the diagram given below, which of the following statements is **CORRECT?**



- A Liquid W is denser than liquid Z.
- B Liquid X is denser than liquid Y.
- C Liquid Z is denser than liquid Y.
- D Liquid W is denser than liquid X.

xvii. Normally, before playing guitar, a guitarist adjusts the tension of the strings.



By tightening the strings, the guitarist

- A decreases the pitch of the sound.
- B increases the pitch of the sound.
- C increases the volume of the sound.
- D decreases the volume of the sound.

xviii. A group of students carried out an experiment using an electromagnet and recorded the following findings.

Number of cells	Number of pins attracted to the nail
1	5
2	12
3	?

cells are used?

- A 6
- B 10
- C 13
- D 16

xix. Which of the pictures given below is adapted to live in the desert?



I

II

III

IV

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

xx. Which information among the following is **TRUE** about the flowers given below?



A

B

- A Flower A attracts insects.
- B Flower B has a lot of pollens.
- C There is no scent and nectar in the flower A.
- D Pollens are carried by insects in the flower A.

xxi. Study the table given below and identify the correct sequence of animal groups from A to E.

Group A	Group B	Group C	Group D	Group E
Trout	Pigeon	Rattle snake	Frog	Tiger
Shark	Sparrow	Cobra	Newt	Bat
Dolphin	Crow	Garden lizard	Salamander	Blue whale

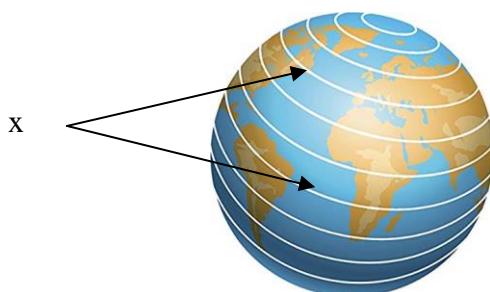
- A Fish, bird, amphibian, mammal, reptile
- B Mammal, amphibian, reptile, bird, fish
- C Fish, bird, reptile, amphibian, mammal
- D Reptile, amphibian, bird, fish, mammal

xxii. 'During this stage, many physiological changes happen in the body. Both the genders become capable of reproducing. Girls start to have menstruation and boys experience thickening of voice.'

The above changes take place during

- A old age.
- B childhood.
- C adulthood.
- D adolescence.

xxiii. What do the lines 'x' determine?



- A place and time
- B time and climate
- C weather and climate
- D distance around the Earth

xxiv. From the findings given below, what can we conclude about kinetic energy?

Number of books piled	Distance covered by the marble (cm)
3	10
6	20
9	30

- A Kinetic energy depends on mass.
- B Kinetic energy depends on speed.
- C Kinetic energy depends on distance.
- D Kinetic energy depends on height and mass.

xxv. The pictures I and II represent



I

II

- A rotation and revolution.
- B revolution and rotation.
- C revolution
- D rotation.

Question 2**[10]**

Direction: Fill in the blanks with appropriate word(s). Write the answers in the spaces provided.

- i. Hydrochloric acid helps in _____.
- ii. The white coating formed in water boilers is due to the presence of calcium and _____ mineral salts in water.
- iii. In the process of photosynthesis, starch and _____ are produced.
- iv. The weight of an object will be zero if there is no _____.
- v. Solids which dissolve in liquids are called _____.
- vi. Sound needs a _____ to travel.
- vii. A bar magnet is an example of _____ magnet.
- viii. Bread turns blue-black when _____ is added to it.
- ix. The spinal cord is protected by the _____.
- x. Plants that grow on others plants are known as _____.

Question 3**[10]**

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 Gravitational force	a arteries
ii Cold-blooded animals	b lunar eclipse
iii Dead remains of plants and animals	c fruits and vegetables
iv Ovules	d wheel and axle
v Shadow on the Moon	e altitude
vi Blood with oxygen	f fractional distillation
vii Vitamins and minerals	g reptiles
viii Closing of water tap	h fossil fuels
ix South Pole	i seeds
x Purification of oil	j Antarctica
	k birds

i	
ii	
iii	
iv	
v	
vi	
vii	
viii	
ix	
x	

Question 4**[10]****Direction: Write TRUE or FALSE against each statement in the space provided.**

- i. The higher the object, the more the potential energy. (_____)
- ii. Decaying of food is a reversible change. (_____)
- iii. It is safe to connect many electrical appliances to a single electrical point.
(_____)
- iv. Birds are the only animals that lay eggs. (_____)
- v. Athlete's foot is a skin disease. (_____)
- vi. Animals that live in water are called terrestrial animals. (_____)
- vii. Dandelion seeds are dispersed by wind. (_____)
- viii. The sound produced by a flute is due to the vibration of air.
(_____)
- ix. 10 kg of mercury is denser than 1kg of mercury. (_____)
- x. Miscible liquids with the same boiling point can be separated by distillation.
(_____)

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

Question 5

a. We use rubber gloves, laboratory coat and goggles while carrying out the experiments with acids and alkalis. Give **TWO** reasons. [2]



b. You are asked by your science teacher to prepare a local indicator using the following materials. List the **FOUR** steps in sequence that you would follow to prepare the indicator. [2]



Step 1:	
Step 2:	
Step 3:	
Step 4:	

c) i. Hard water makes our bones and teeth strong. Give **ONE** reason.

[1]

ii. School dress fades colour over time. What kind of change is it?

[1]

d) i. It is important to practise local methods of separation in our villages. Give **TWO**

[2]

reasons.

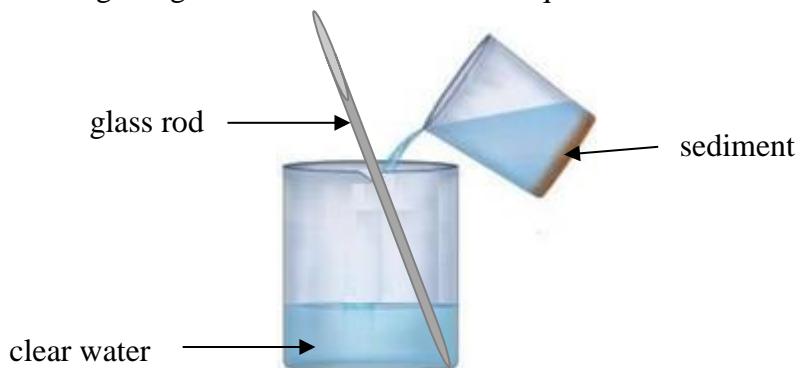
ii. Briefly explain how salt is produced from sea water.

[1]

Question 6

a. At a construction site, a labourer wants to separate sand from gravels. Which [2] method would he use to separate the two substances? Why?

b. Study the diagram given below and answer the questions that follow.



i. What method of separation is used in the above picture? [1]

ii. Name **ONE** example of immiscible liquid mixture that can be separated by the [1] above method.

c) i. What happens to the ray of light as it passes from air to water?

[1]

ii. Differentiate between reflection and refraction along with an example each.

[2]

Reflection	Refraction

d. Mention **TWO** uses of electro-magnets in our daily lives.

[2]

Question 7

a. Draw a series circuit diagram to light up a science model house using two lemons, [2] one bulb and a wire.

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b. What makes birds different from other animals? Mention **TWO** points. [2]

c) i. How are the following animals adapted to live in the polar regions? Mention [1]
ONE point each.

Animal	Adaptation	
Polar bear		
Penguins		

ii. Name the causative organisms of the following diseases. [1]

Disease	Causative organisms	
Tuberculosis		
Conjunctivitis		

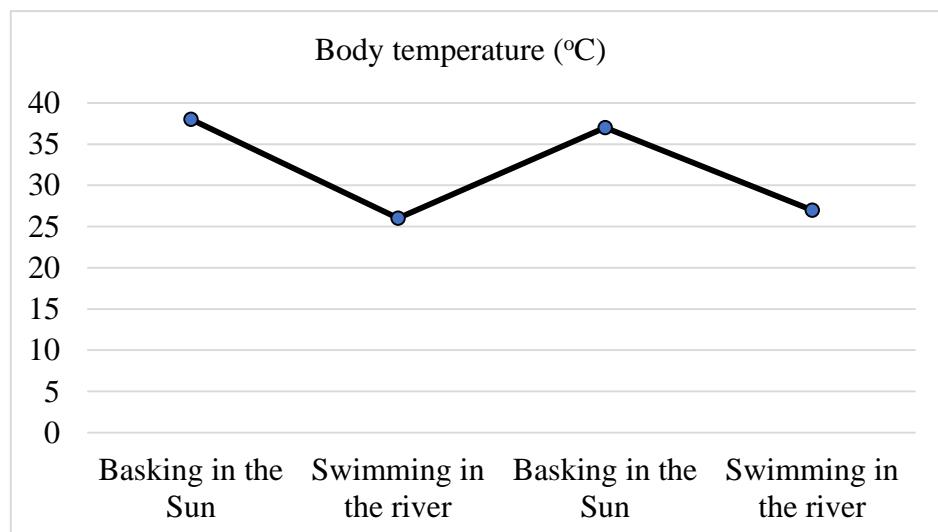
d. Design an experiment to show that water is necessary for germination of seeds. [3]

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Question 8

a. Your friend is planning to buy a live gold fish as a pet. With the knowledge of fish and their characteristics learned in science lessons, give **TWO** suggestions to keep the fish alive and healthy. [2]

b. The body temperature of an animal 'x' in two different environments is shown below.



i. Is the animal 'x' cold-blooded or warm-blooded? [1]

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ii. Give **ONE** example of animal 'x'. [1]

iii. Name the class of animals to which the animal 'x' belongs.

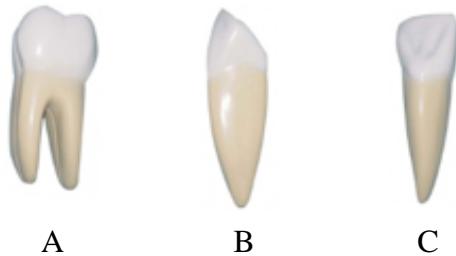
[1]

c. The rate of heart beat increases upon performing physical activities. Give **ONE** reason.

[1]

d. Identify the following kinds of teeth and write **ONE** function each in the table given below.

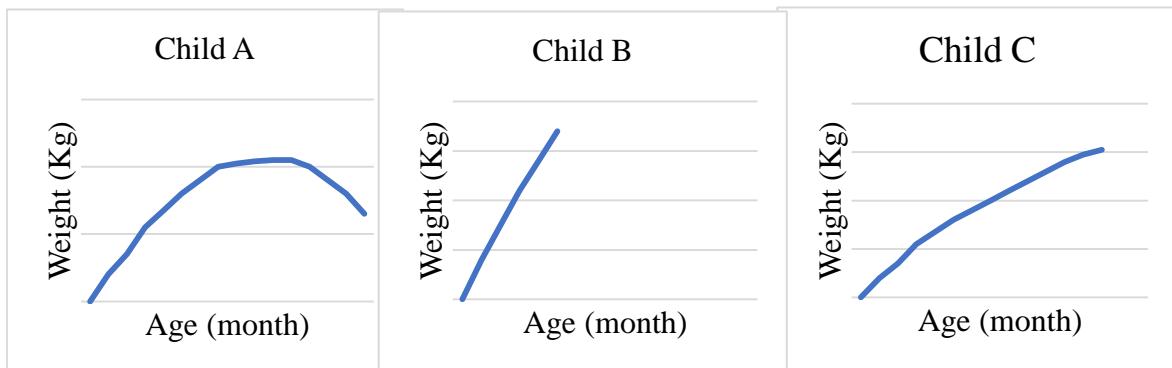
[3]



Label	Name of the tooth	Function	
A			
B			
C			

Question 9

a. Study the following growth charts of Child A, B and C and answer the given question.



What is unhealthy about child B? What could be the reason?

[2]

b. Look at the diagram given below and answer the question that follows.



i. What energy conversion is taking place while the boy is sliding down? [1]

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ii. Simple machines make our life easier. Justify with **TWO** points.

[2]

c. Give **ONE** example of simple machine used in clocks and watches.

[1]

d. i. How do polar nights affect plants?

[2]

ii. What is the role of chlorophyll in photosynthesis?

[1]
