

SECTION A [25 MARKS]
ANSWER ALL QUESTIONS

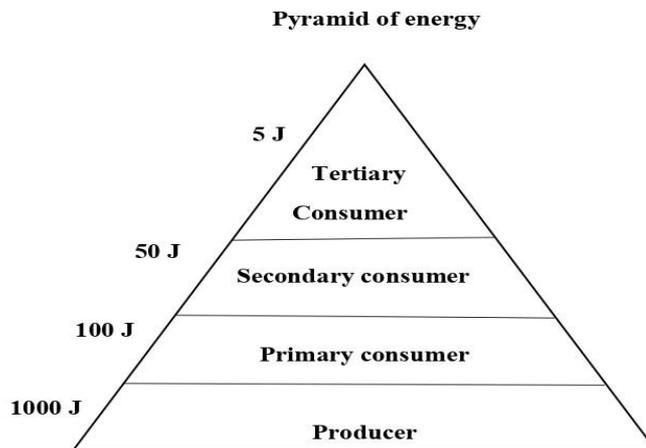
Question 1

a) For each question, there are **FOUR** responses: **A, B, C** and **D**. Choose the corresponding letter of your response and **CIRCLE** it neatly. **NO** score will be awarded if you circle more than **ONE** letter. **[10]**

i. The bats and whales are classified as mammals because they

- A lay eggs.
- B are vertebrates.
- C are cold blooded.
- D feed their young ones.

ii. The energy level decreases as shown in the diagram below because



- A maximum energy is consumed by producer.
- B consumers require less energy at higher trophic level.
- C number of consumers decreases at higher trophic level.
- D some energy is lost in the form of heat through metabolic process.

iii. To understand the impact of junk food on human health, one should

- A compare the cost of junk food.
- B educate oneself about nutritional labels.
- C regularly consume varieties of junk food.
- D read the nutritional facts given in the package.

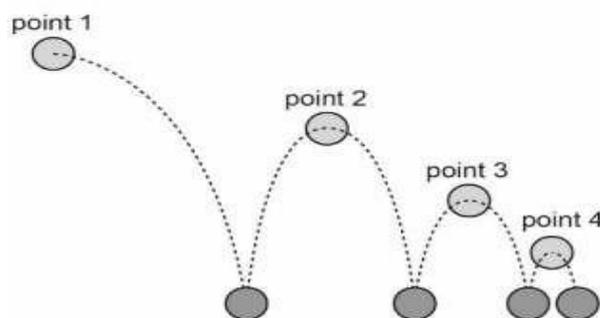
- iv. The seed dispersal contributes to the survival of plant species in the ecosystem by
- A distributing seeds in the same area.
 - B spreading seed to different environment.
 - C increasing the competitions between offspring.
 - D ensuring plants to spread near the parent plant.

- v. Dorji tested different household items and recorded their pH values as shown in the table given below. Which of the following is the most alkaline substance?

Substance	pH value
Baking soda	9
Toothpaste	8
Drain cleaner	13
Hand washing soap	10

- A Tooth paste
 - B Baking Soda
 - C Drain cleaner
 - D Hand washing soap
- vi. A student mixes substance **A** and substance **B** resulting in the formation of bubbles and gases. This process demonstrate that substances has undergone
- A natural change
 - B physical change
 - C chemical change
 - D reversible change

- vii. The figure below shows the different position of the ball before it stops bouncing. At which point the potential energy of the ball is maximum?

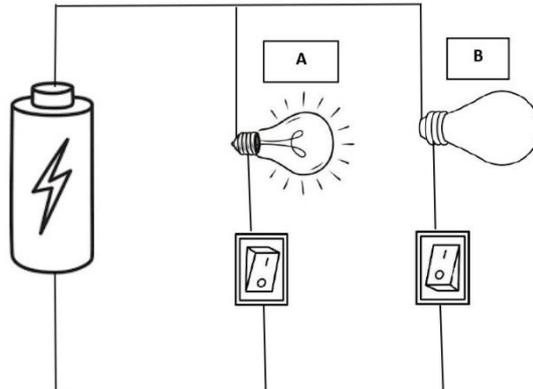


- A Point 1
- B Point 2
- C Point 3
- D Point 4

viii. What would be the weight of an astronaut on the Moon if his weight is 60 N on the Earth?

- A 6 N
- B 60 N
- C 10 N
- D 360 N

ix. Karma constructed an electric circuit as given below. What can be observed from his circuit?



- A Both the bulbs receive unequal voltage.
- B The bulbs glow with unequal brightness.
- C The bulb A glow if bulb B is damaged.
- D The bulb A and B are dependent on each other.

x. What can you conclude about the speed of light and sound during lightning and thundering?

- A Sound travels faster than light
- B Light travels faster than sound
- C light and sound travels at the same speed
- D Sound and light do not travel in the same medium

b) Fill in the blanks with appropriate word(s).

[5]

i.	Hydrophytes have poorly developed roots while _____ have well developed roots.
ii.	The blood vessel which has thick, strong and elastic wall is _____.
iii.	Yellowing of leaves in the plant is a _____ deficiency symptom.
iv.	_____ magnet can retain magnetic properties for longer duration.
v.	At the peak of Mount Everest, a person's weight is slightly _____ than at the sea level.

c) Write TRUE or FALSE for the following statement in the space provided in the 'Answer' column. [5]

i.	During the process of photosynthesis, the plant uses oxygen and releases carbon dioxide.		
ii.	The speed of the sound depends on arrangement of the particles in its medium.		
iii.	Rainbow is formed due to reflection of light.		
iv.	Puberty occurs at the same age for all the individuals.		
v.	Solubility of 5 g salt is higher than that of 10 g salt in 50 mL of water at the same temperature.		

d) Match each item in column A with the most appropriate item in column B. Write the correct letter in the space provided in the 'Answer' column. [5]

Column A		Column B	Answer
i.	Apex predator	a. Earth's tilted axis	i.
ii.	Compound	b. Magnesium ions	ii.
iii.	Hard water	c. Rotation of the earth	iii.
iv.	Water and milk	d. Immiscible	iv.
v.	Polar day and polar night	e. Tiger	v.
		f. Miscible	
		g. Carbon dioxide	

SECTION B [25 MARKS]
ALL QUESTIONS ARE COMPULSORY

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

Question 2

- a) Flying lizards are known for their unique ability to move from trees to trees using wing-like structures and lay eggs. Which class of animals do they belong to? Provide **TWO** reasons to support your answer. **[2]**

- b) Climate change refers to increase in the Earth's temperature and changes in weather patterns worldwide. Does climate change help or harm human beings? Justify with any **TWO** reasons. **[2]**

- c) Rigzang wants to study varieties of insect pollinators in his garden. If you are Rigzang, how would you improve the garden to attract varieties of insect pollinators? **[1]**

Question 3

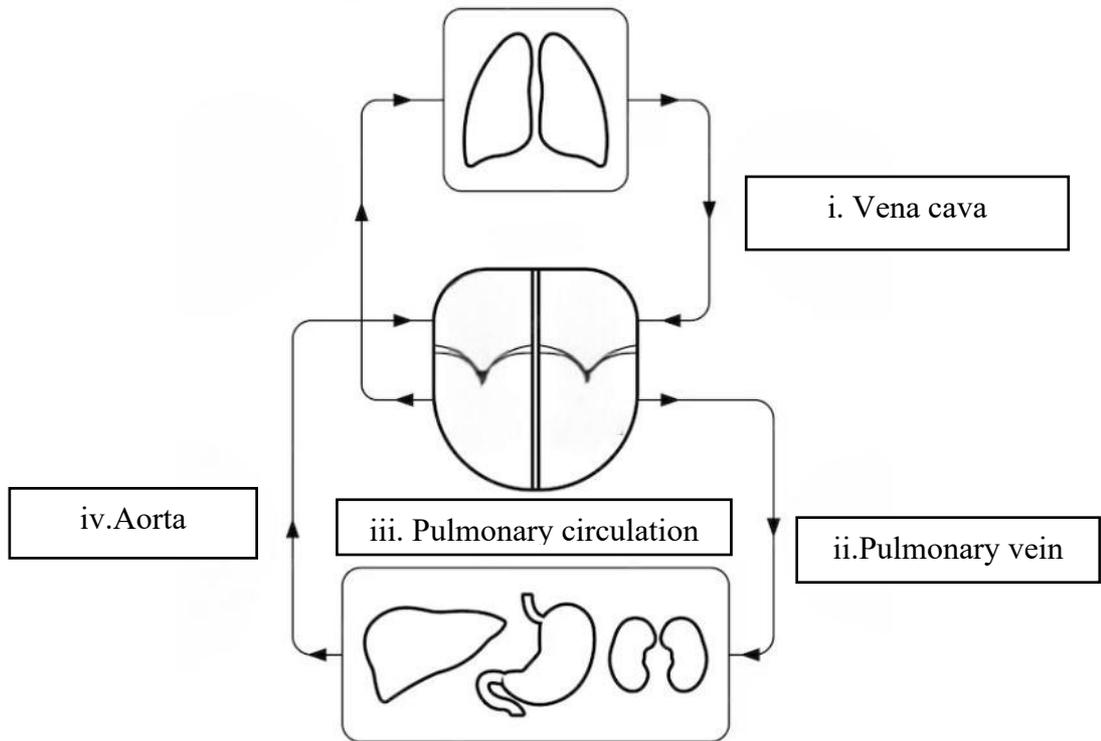
- a) Karma and his friends grew a plant each in pots. The following observations were made after two weeks. Answer the following questions.

Name	How the plant looked	Growth of plant in cm
Karma	Green and healthy	25
Dawa	Dry and brown	10
Nima	Thin and weak	6

- i. Whose plant grew the best and why? **[1]**

- ii. Explain why Nima's plant is thin and weak. **[1]**

b) Study the diagram given below and write your observations in the space provided? [2]



i.	
ii.	
iii.	
iv.	

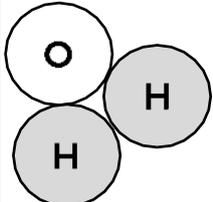
c) During the school sports day, Sonam jumped over a height of 2 m and recorded a potential energy of 1000 J. Find the mass of Sonam. (use $g = 10 \text{ m/s}^2$) [1]

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Question 4

a) Study the table given below and fill in the blanks from i to iv.

[2]

Chemical formula	Visual representation	Element or compound	Total no. of atoms	No. of molecules	No. of elements
H ₂ O		i. _____	ii. _____	iii. _____	iv. _____

i.	
ii.	
iii.	
iv.	

b) Why is it important for students to eat breakfast to improve academic performance?

[1]

c) How can you get a clear picture of moon during lunar eclipse? Draw and explain.

[2]

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Question 5

a) Design a simple fishing game based on the principles of magnetism? Draw, label and explain your design.

[2]

- b) Dorji and his family face difficulties while washing clothes and experiences dryness of skin after taking bath. What type of water are they using? How would you advise Dorji and his family to overcome those challenges? **[2]**

- c) What would happen if there is no refraction of light? **[1]**

Question 6

a) A student carried out an experiment on floating and sinking. He placed the same object first in the water and then in the oil. He has observed that the object floats in water and sinks in the oil. Based on the experiment conducted by the student, answer the following questions. **[2]**

- i. Compare the density of the water and oil.
- ii. What can you conclude from this experiment?

b) Beaker A contains a mixture of kerosene and water. Beaker B contains the salt solution. What separation methods will you use to separate these mixtures? **[1]**

c) Suppose you and your friend are on the moon. Will you be able to hear any sound produced by your friend? Why? **[1]**

