INDIAN SCHOOL SOHAR **Total No of Printed Pages :2**
PERIODIC TEST -1 (2023-24)
SCIENCE (086)

CLASS: X **MAX.MARKS: 20**
DATE:23/05/23 **SET 1** **TIME:40 MINUTES**

General Instructions:

i. This question paper consists of 10 questions in 4 sections.
ii. All questions are compulsory. However, an internal choice is provided in some questions. Student is expected to attempt only one of these questions.
iii. **Section A** consists of 6 objective type questions carrying 1 mark each.
iv. **Section B** consists of 1 very short question carrying 02 marks. Answer to this question should be in the range of 30 to 50 words.
v. **Section C** consists of 1 short answer type questions carrying 03 marks. Answer to this question should be in the range of 50 to 80 words.
vi. **Section D** consists of 1 long answer type question carrying 05 marks. Answer to this question should be in the range of 80 to 120 words.
vii. **Section E** consists of 1 case-based unit of assessment of 04 marks with sub-parts.

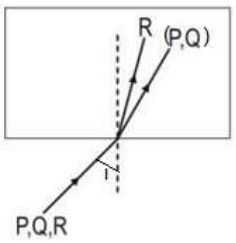
SECTION – A

1. Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of reaction involved?

i) Displacement reaction
ii) Precipitation reaction
iii) Combination reaction
iv) Double displacement reaction

(a) (i) only (b) (ii)&(iii) (c) (iv) only (d) (ii)&(iv) 1

2. A beam of light consisting of three rays P, Q, R is incident on a transparent plastic block from air with the same angle of incidence as shown in the figure below



Which of the following statements is true?

a. Refractive index for P is greater than that for Q.
b. Refractive index for P is greater than that for R.
c. Refractive index for R is greater than that for Q.
d. Refractive index for P, Q and R is the same. 1

3 During vigorous exercise, the fatigue in muscles is caused due to the formation of :
a. Ethanol
b. Pyruvate
c. Glycogen
d. Lactic Acid 1

4 Choose the option that gives correct match of column A and column B.

COLUMN A	COLUMN B
A- Cuscuta	i – uses finger like extensions for food intake
B- Paramoecium	ii - Absorbs the digested food
C- Amoeba	iii – Parasitic nutrition
D- Bread mould	iv- Cilia are involved in ingestion of food

a) A – i B – iv C – ii D – iii
b) A – iii B – iv C – i D – ii
c) A – iii B – iv C – ii D – i
d) A – i B – iii C – ii D – iv 1

Q. No 5 and 6 are Assertion – Reasoning based questions. These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true and R is not the correct explanation of A
(c) A is true but R is false
(d) A is False but R is true

5 **Assertion (A)**: The black coating on silver and the green coating on copper are examples of corrosion. 1
Reason (R): Corrosion causes damage to car bodies, bridges, iron railings, ships, and all objects made of metal, especially those made of iron

6 **Assertion (A)** : Opening and closing of stomatal pore is the function of guard cells.
Reason (R) : Stomatal pores are the site for exchange of gases. 1

SECTION-B

7 On a construction site, quicklime was used to prepare a mixture for plastering walls. However, the mixture started to heat up and release a large amount of steam. Explain the chemical reaction that is happening and why this reaction is exothermic. 2

SECTION-C

8 A reddish brown coloured metal, used in electrical wires, when powdered and heated strongly in an open china dish, its colour turns black. When hydrogen gas is passed over this black substance, it regains its original colour. Based on the above information answer the following questions. 3

(i) Name the metal and the black-coloured substance formed.
(ii) Write balanced chemical equations for both the reactions.

SECTION – D

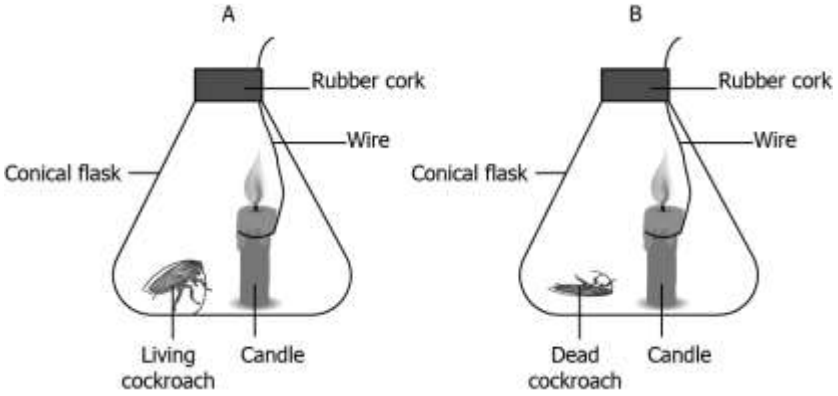
9 a) The image of an object formed by a mirror is real, inverted and is of magnification -1. If the image is at the distance of 30 cm from the mirror, where is the object placed? Find the position of the image if the object is now moved 20 cm towards the mirror. What is the nature of the image obtained? Justify your answer with the help of a ray diagram. 5

b) A ray of light enters into benzene from air. If the refractive index of benzene is 1.50, find the speed of light in benzene ? Speed of light in air = 3×10^8 m/s

SECTION – E

10 Study the case given below and answer the following questions :

A student set up an experiment to study the process of respiration. In the experiment, the student places a candle and a living cockroach in the flask A, while a candle and a dead cockroach in flask B. After 10 minutes, the student observes that the candle in flask A extinguish faster while candle in flask B keeps burning for a longer time.



4

a) Why the candle in flask A got extinguished faster ?
b) Why did candle burn for a longer duration in flask B?
c) State any two conclusions that can be drawn from the above experiment?

OR

c) Mention the two pathways of glucose break down which occur anaerobically.

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General Instructions:

i. This question paper consists of 10 questions in 4 sections.
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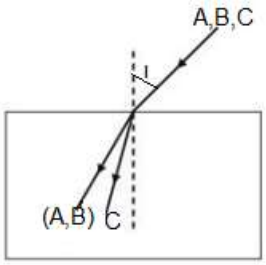
vi. **Section D** consists of 1 long answer type question carrying 05 marks. Answer to this question should be in the range of 80 to 120 words.
vii. **Section E** consists of 1 case-based unit of assessment of 04 marks with sub-parts.

SECTION – A

1. Electrolysis of water is a decomposition reaction. The molar ratio of hydrogen and oxygen gases liberated during electrolysis of water is 1
(a) 1:1 (b) 2:1 (c) 1:8 (d) 1:2

2. A beam of light consisting of three rays A, B, C is incident on a transparent plastic block from air with the same angle of incidence as shown in the figure below
Which of the following statements is true? 1



a. Refractive index for A, B and C is the same.
b. Refractive index for C is greater than that for B.
c. Refractive index for A is greater than that for C.
d. Refractive index for A is greater than that for B.

3 Which of the following statements are correct?
(i) Pyruvate can be converted into ethanol and carbon dioxide by yeast
(ii) Fermentation takes place in aerobic bacteria 1
(iii) Fermentation take place in mitochondria
(iv) Fermentation is a form of anaerobic respiration
a) (i) and (iii) b) (ii) and (iv) c) (i) and (iv) d) (ii) and (iii)

4 The digestion of Proteins begins in
a) Mouth b) Stomach c) Small Intestine d) Oesophagus 1

Q. No 5 and 6 are Assertion - Reasoning based questions. These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:
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(c) A is true but R is false
(d) A is False but R is true

5 **Assertion (A)**: When fats and oils are oxidized, they become rancid, and their smell and taste change. 1
Reason (R): Chips manufacturers usually flush bags of chips with gas such as nitrogen to prevent the chips from getting oxidised.

6 **Assertion (A) :** Herbivores need longer small intestine than carnivores.
Reason (R) : Cellulose takes longer time to get digested. 1

SECTION-B

7 Name the reducing agent and the oxidizing agent in the following reaction. 2

$3MnO_2 + 4Al \rightarrow 3Mn + 2Al_2O_3$

State which is more reactive, Mn or Al and why?

SECTION-C

8 A jewellery maker accidentally spills a cleaning solution containing lead nitrate onto a table. He observes the formation of a precipitate when the solution comes into contact with a small container containing potassium iodide. Explain the chemical reaction using a balanced chemical equation. Also, identify the type of reaction that is occurring and the colour of the precipitate. 3

SECTION – D

9 a) Size of an image obtained on a screen by a mirror having a focal length of 20 cm is observed to be reduced to $(1/3)^{rd}$ of the size of the object. At what distance the object has been placed from the mirror? What is the nature of the image and the mirror? Justify your answer with the help of ray diagram. 5

b) For the same angle of incidence in media A,B and C, the angles of refraction are 20^0 , 30^0 and 40^0 respectively. In which medium will the velocity of light be maximum? Give reason in support of your answer.

SECTION – E

10 Read the following passage and answer the questions that follow :

Ravi is suffering from severe stomach pain and vomiting. He consulted a doctor who advised him to go for an ultrasound of abdominal area. After receiving the report, doctor confirmed that Ravi has multiple stones in the gall bladder so he should go for the removal of gall bladder through a surgery. Ravi is reluctant to go for gall bladder removal sugery as he thinks that his health would be adversely affected

a) State the importance of gall bladder in the digestive system. 4

b) The image given below shows digestive glands associated with alimentary canal.

Identify the part marked as **P**. Mention the importance of P in food digestion ?

c) If a person is suffering from malfunctioning of Pancreas, what will be its impact on food digestion?

OR

c) State the role of small intestine in the digestive system. (Two points)