**ATOMIC ENERY CENTRAL SCHOOL NO.3 , MUMBAI**

 **PERIODIC TEST - 1, EXAMINATION - 2024-2025**

**CLASS -X Time- 1.5 Hrs**

**SUBJECT- SCIENCE Max. Marks- 40**

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**General Instructions:** i) All questions are compulsory. ii) The question paper Contains Physics, Chemistry and Biology questions separately**.**

**iii) Please write down the serial number of the question in the answer- book before attempting it.**

iv) 15 minute time has been allotted to read this question paper. The students will read the question paper only and will not write any answer on the answer – book during this period**.**

 **PHYSICS (14)**

Q1 . A spherical mirror and a thin spherical lens have each a focal length of –15 cm. The

mirror and the lens are likely to be **1M**

(a) both concave.

(b) both convex.

(c) the mirror is concave and the lens is convex.

(d) the mirror is convex, but the lens is concave.

Q2. Where an object should be placed in front of a convex lens to get a real image of the **1M**

size of the object?

(a) At the principal focus of the lens

(b) At twice the focal length

(c) At infinity

(d) Between the optical centre of the lens and its principal focus

Q3. For this question two statements are given—one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. (a) Both A and R are true, and R is the correct explanation of the assertion. ( b) Both A and R are true, but R is not the correct explanation of the assertion. (c) A is true, but R is false. (d) A is false, but R is true. **1M**

**Assertion(A) :** A ray of light travelling from a rarer medium to a denser medium slows down and bends away from the normal. When it travels from a denser medium to a rarer medium, it speeds up and bends towards the normal.
**Reason (R) :** The speed of light is higher in a rarer medium than a denser medium.

Q4. An object 5.0 cm in length is placed at a distance of 20 cm in front of a convex

mirror of radius of curvature 30 cm. Find the position of the image, its nature **2M**

and size.

Q5. Define 1 dioptre of power of a lens.. Find the power of a concave lens of focal length 2 m. **2M**

Q6. Name the type of mirror used in the following situations.  **3M**

(a) Headlights of a car.

(b) Side/rear-view mirror of a vehicle.

(c) Solar furnace.

Support your answer with reason.

Q7.Draw ray diagrams showing the image formation by a concave mirror when an object is placed

 **4 M**

(a) between pole and focus of the mirror

(b) between focus and Centre of curvature of the mirror

( c) at centre of curvature of the mirror (d) at infinity.

 **CHEMISTRY (13M)**

Q1. A dilute ferrous sulphate solution was gradually added to the beaker containing acidified potassium permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for observation ? **1M**

 (a) KMNO4 is an oxidising agent ,it oxidises FeSO4 .

 (b) FeSO4 acts as an oxidising agent and oxidises KMNO4 .

 (c) The colour disappears due to dilution ; no reaction is involved.

 (d) KMNO4 is an unstable compound and decomposes in presence of FeSO4 to a colourless compound.

Q2. .For this question two statements are given—one labeled **Assertion (A)** and the other labeled **Reason (R).** Select the correct answer to these questions from the **codes (a), (b), (c) and (d)** as given below. **(a) Both A and R are true, and R is the correct explanation of the assertion . ( b) Both A and R are true, but R is not the correct explanation of the assertion**. **(c) A is true, but R is false. (d) A is false, but R is true**. **1M**

 **Assertion (A)** : Silver bromide decomposition is used in black and white photography.

 **Reason (R)** : Light provides. energy for this exothermic reaction .

Q3. (a) Solution of a substance 'X ' is used for testing carbon dioxide. Write the equation of the reaction of 'X' with carbon.

 (b) How is 'X' obtained ? Write chemical reaction **. 2M**

 Q4. Aluminium is a reactive metal but is still used for packing food articles .Why ? **2M**

 Q5. Consider the chemical equation given below and answer the questions that follow:

 CuO + H2 ----------------HEAT----------------------------------------------->  Cu + H2O

 (i) Name the substance which is getting oxidised .

 (ii) Name the substance which is is getting reduced .

 (iii) Name the oxidising and reducing agent . **3M**

Q6. (a) Design an activity to demonstrate the decomposition reaction of lead nitrate.

 (b) Why is respiration considered an exothermic reaction ? Explain. **4M**

  **BIOLOGY (13M)**

 Q1. For this question two statements are given—one labeled **Assertion (A)** and the other labeled **Reason (R).** Select the correct answer to these questions from the **codes (a), (b), (c) and (d)** as given below. **(a) Both A and R are true, and R is the correct explanation of the assertion . ( b) Both A and R are true, but R is not the correct explanation of the assertion**. **(c) A is true, but R is false. (d) A is false, but R is true**. **1M**

**Assertion (A):** Amphibians can tolerate mixing of oxygenated and deoxygenated blood.

**Reason (R) :** Amphibians are animals with two chambered heart.

**Q2**. If salivary amylase is lacking in the saliva , which of the following events in the mouth cavity will be effected ? **1M**

 (a) Proteins breaking down into amino acids.

 (b) Starch breaking down into sugars.

 (c) Fats breaking down into fatty acids and glycerol.

 (d) Absorption of vitamins.

**Q3**. Blood is fluid connective tissue that circulates throughout our body and delivers essential nutrients like oxygen to the body cells. It also transport metabolic waste products away from the cells. Blood cannot be made or manufactured outside the body. Blood donation is the only source of blood for patients that need blood transfusion.

 Percentage composition of different components of blood :

 Plasma------------------ 55%

 WBC & Platelets----------< 1%

 RBC -------------------- 45%

 (i) Why do you think donating blood is not harmful even though RBC carry oxygen to the body? (ii) Which component is deficient in your blood if you lose too much of blood from a cut ? **2M**

**Q4**. (i) What is translocation ? Why is it essential for plants ?

 (Ii) Where do the substances in plants reach as a result of translocation ? **2M**

**Q5**. Enlist the three main events occur during the process of photosynthesis . **3M**

**Q6**. Why the Circulation of blood through human heart is called double circulation ?

 Explain the process of double circulation with the help of flow chart. **4M**

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