

UP Board 10 Science - 824-EP - 2023 Question Paper

Time Allowed :3 Hours 15 Minutes

Maximum Marks :70

Total Questions :96

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The test is of 3 hours 15 Minutes duration.
2. The question paper consists of 96 questions.
3. In Section - B, there are 20 short Solution type questions, each carrying 2 marks, out of which any 10 questions are to be Solved. Apart from these, there are 6 long Solution type questions, each carrying 5 marks, out of which any 3 questions are to be Solved.
4. Minimum 30% marks in each subject (30 out of 100 for theory, adjusted for practicals where applicable).
5. Use of any electronic appliances is strictly prohibited.

1. Power of a lens is -2.5 D. The focal length and nature of the lens is:

- (A) 40 cm; Concave
- (B) 40 cm; Convex
- (C) 4 cm; Concave
- (D) 4 cm; Convex

1. If electric power and resistance are expressed as P and R respectively, then electric current is expressed as:

- (A) $\frac{P}{R}$
- (B) $\sqrt{\frac{P}{R}}$
- (C) $\frac{R}{P}$

1. Speed of light in medium (1) and medium (2) are v_1 and v_2 respectively, then the refractive index of medium (1) with respect to medium (2) is:

- (A) $\frac{v_1}{v_2}$
- (B) $\frac{v_2}{v_1}$
- (C) $v_1 \times v_2$
- (D) $v_1 + v_2$

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1. Which of the following statements is false?

- (A) Magnetic field lines emerge out from north pole of magnet.
 - (B) Magnetic field lines are from south towards north pole inside the magnet.
 - (C) Magnetic field lines intersect each other.
 - (D) Magnetic field lines are closed curves.
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1. In which of the following mirrors, the field of view is maximum?

- (A) Convex mirror
 - (B) Plane mirror
 - (C) Concave mirror
 - (D) None of the above
-

1. What is the total resistance of two resistors, R and $2R$, when they are connected in parallel?

- (A) $\frac{R}{2}$
 - (B) $\frac{3R}{2}$
 - (C) $\frac{2R}{3}$
 - (D) $\frac{5R}{3}$
-

1. The number of turns is increased by n times in a current-carrying circular coil. Then the magnetic field at the center of the coil is:

- (A) Increased by n times
 - (B) Decreased by n times
 - (C) Increased by n^2 times
 - (D) Unchanged
-

1. The IUPAC name of $\text{CH}_3\text{CH}_2\text{OH}$ is:

- (A) Ethanol
- (B) Methanol

- (C) Acetic Acid
 - (D) Ethanoic Acid
-

1. Which of the following is a combustion reaction?

- (A) $\text{NaOH} + \text{CH}_3\text{COOH} \rightarrow \text{CH}_3\text{COONa} + \text{H}_2\text{O}$
 - (B) $\text{CH}_4 + \frac{\text{C}}{2} \xrightarrow{\text{presence of sunlight}}$
 - (C) $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + \text{Heat and light}$
 - (D) $\text{C} = \text{C} \xrightarrow{\text{Catalyst}} \text{R}-\text{C}-\text{C}-\text{R}$
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1. On going down a group, the size of an atom increases because:

- (A) A new orbit is added on going down in a group.
 - (B) The distance between the nucleus and the outermost orbit remains the same.
 - (C) The charges in the nucleus remain constant.
 - (D) None of the above.
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1. The chemical formula of Plaster of Paris is:

- (A) $\text{CaSO}_4 \cdot 3\text{H}_2\text{O}$
 - (B) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
 - (C) $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
 - (D) $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$
-

12. The pH value of pure water remains:

- (A) 1
 - (B) 7
 - (C) 0
 - (D) 14
-

1. The functional group in Aldehyde is:

- (A) $-\text{OH}$
 - (B) $-\text{C} = \text{O}$
 - (C) $-\text{C} = \text{O}$
 - (D) $-\text{C}-\text{OH}$
-

1. Which of the following is a producer?

- (A) Birds
 - (B) Wild animals
 - (C) Pet animals
 - (D) Green plants
-

1. Crossing between long pea plants (LL) and dwarf plants (tt) shall yield the following generation:

- (A) All long plants
 - (B) All dwarf plants
 - (C) Half long and half dwarf plants
 - (D) Three fourth long and one fourth dwarf plants
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1. Which of the following pair is used in the reaction of photosynthesis?

- (A) Carbon dioxide and Oxygen
 - (B) Water and Oxygen
 - (C) Water and Carbon dioxide
 - (D) Carbon dioxide and Nitrogen
-

1. A common unisexual male flower doesn't have:

- (A) Sepal
 - (B) Petal
 - (C) Stamen
 - (D) Stigma
-

18. Insulin is secreted by:

- (A) Thyroid gland
 - (B) Pancreas
 - (C) Pituitary gland
 - (D) Testis
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1. The principle of organic evolution was propounded by:

- (A) Charles Darwin
 - (B) Gregor Johann Mendel
 - (C) Amrata Devi Vishnoi
 - (D) Stanley L. Miller
-

1. On burning, fossil fuel gives:

- (A) Oxides of Carbon
 - (B) Oxides of Nitrogen
 - (C) Oxides of Sulphur
 - (D) All of the above
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Question: Draw a ray diagram in order to obtain a virtual image of an object by a concave mirror. Write down any one use of this mirror.

Question: Explain the phenomenon of dispersion of white light through a prism by making a diagram.

Question: What is Ohm's Law? Explain the verification of this law with the help of a circuit diagram.

Question: What is the phenomenon of electromagnetic induction? Explain Faraday's experiment associated with this phenomenon.

Question: Explain the production of a magnetic field due to current in a conductor by making a diagram.

Question: Explain the following by giving examples:

1. Importance of pH in daily life
 2. Exothermic chemical reactions
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Question:

1. Write chemical equations of two chemical properties of Ethanoic Acid.

2. How will you obtain the following? (Write chemical equations)

(a) Washing Soda from Baking Soda

(b) Plaster of Paris from Gypsum

Question: Explain the following:

1. Cleansing action of soap
2. Calcination and Roasting
3. Activity series of metals

Question:

1. Write one main function of Xylem in plants.
2. In which organ of the body is Copper replaced?
3. On which plant did Mendel perform his experiment?
4. Give examples of homologous organs.

Question: Describe double circulation in human beings.

Question: Write short notes on the following:

1. Conservation of natural resources
2. Regeneration

Question: Describe the structure of the nephron in the kidney. How does it function?

Question: Write short notes on the following:

1. Autotrophic nutrition
 2. Transpiration
 3. Chipko movement
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