

Q.P. SET CODE
D

MT - Z

Seat No.

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2017 ___ 1100 - **MT - Z** - SCIENCE & TECHNOLOGY - I (72) - SET - D (E)

Time : 2 Hours

(Pages 3)

Max. Marks : 40

Note :

- (i) Draw well-labelled diagrams wherever necessary.
- (ii) All questions are compulsory.
- (iii) Students should write the answers of questions in sequence.

Q.1. (A) Answer the following sub-questions : 2

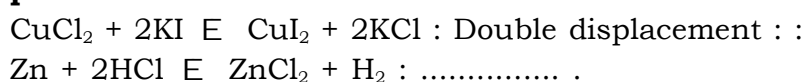
(1) Fill in the blanks and rewrite the complete statements :

- (i) Elements present in group 1 and 2 on the left side and 13 to 17 on the right side of the periodic table are called..... .
- (ii) When a light ray travels obliquely from air to water, it bends the normal at the point of incidence.

(2) State whether the following statements are true or false and if false, write the correct statement : 2

- (i) Resistivity of pure metals is more than that of alloys.
- (ii) Magnetic lines of force always cross each other.

(3) Considering the relationship in the first pair, complete the second pair : 1



Q.1. (B) Rewrite the following statements by selecting the correct options : 5

- (1) Inside water, an air bubble behaves :
 - (a) always like a concave lens
 - (b) always like a convex lens
 - (c) always like a flat plate
 - (d) sometimes like a convex and sometimes like concave lens

- (2) Concentration of ions can be measured with the pH scale.
- (a) hydroxyl (b) hydrogen
(c) oxygen (d) sodium
- (3) The ray of light gets deviated when it passes from one medium to another medium because –
- (a) the colour of light changes
(b) the frequency of light changes
(c) the velocity of light changes
(d) None of these
- (4) When the crystals of ferrous sulphate are strongly heated, the residue obtained is
- (a) red in colour (b) blue in colour
(c) green in colour (d) colourless
- (5) Which of the following represents the mirror formula ?
- (a) $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$ (b) $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$
(c) $\frac{1}{v} + \frac{1}{u} = \frac{1}{R}$ (d) $\frac{1}{u} - \frac{1}{v} = \frac{1}{f}$

Q.2. Answer the following subquestions : (any five)**10**

- (1) Give scientific reason :
Metallic character decreases from left to right in a period.
- (2) A ray diagram for object position beyond $2F_1$ for a convex lens.
- (3) Give scientific reason :
Wires carrying electricity should not be touched bare footed.
- (4) Explain Newland's law of octaves giving examples.
- (5) Explain the following chemical reaction with the help of balanced equation :
Sodium carbonate reacts with dilute hydrochloric acid.
- (6) Name two causes of global warming.

Q.3. Answer the following subquestions : (any five)**15**

- (1) An object is held 20 cm away from a converging lens of focal length 10 cm. Find the position of the image formed.
- (2) What are redox reactions? Identify the substances that are oxidised and the substances that are reduced in the following reactions:
 - (i) $\text{CuO}_{(s)} + \text{H}_{2(g)} \rightarrow \text{Cu}_{(s)} + \text{H}_2\text{O}_{(l)}$
 - (ii) $\text{BaSO}_4 + 4\text{C} \rightarrow \text{BaS} + 4\text{CO}$
- (3) Explain how the formation of the rainbow occurs.
- (4) State three points of difference between conductors and insulators.
- (5) How do acids and bases react with each other? What is the name of the process? What product is obtained out of this reaction?
- (6) Give the impact of noise pollution on human body.

Q.4. Answer the following subquestion : (any one)**5**

- (1)
 - (a) State the function of iris and ciliary muscles.
 - (b) State any two similarities between human eye and camera
 - (c) What is distance of distinct vision?
- (2) With a neat labelled diagram give the principle and working of an electric motor.

Best Of Luck 🍀