

MT

2017 ___ ___ 1100

Seat No.

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MT - SCIENCE & TECHNOLOGY - I (72) - SEMI PRELIM - II : PAPER - 4

Time : 2 Hours

(Pages 3)

Max. Marks : 40

Note :

- (i) All questions are compulsory.
- (ii) All questions carry equal marks.
- (iii) Draw neat and labelled diagrams wherever necessary.

Q.1. (A) Fill in the blanks: 3

- (1) The formula of chloride of metal is MCl_2 , the metal M belongs togroup.
- (2) The image of an object is formed behind in hypermetropia.
- (3) The SI unit of charge is

Q.1. (B) State whether the following statements are true or false 2 and if false, write the correct statement:

- (1) Conversion of quick lime to slaked lime is an example of displacement reaction.
- (2) The electric bulb consists of the filament whose melting point is low.

Q.2. Rewrite the following statements by selecting the correct alternative: 5

- (1) When barium chloride solution is added to sodium sulphate solution,
 - (a) blue precipitate is formed
 - (b) white precipitate is formed
 - (c) green precipitate is formed
 - (d) no reaction takes place

- (2) Which of the following is an example of decomposition reaction ?
- (a) $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{CO}_2$
 - (b) $\text{H}_2\text{O} + \text{CO}_2 \rightleftharpoons \text{H}_2\text{CO}_3$
 - (c) $\text{CaS} + 2\text{HCl} \rightleftharpoons \text{CaCl}_2 + \text{H}_2\text{S}$
 - (d) $2\text{H}_2 + \text{O}_2 \rightleftharpoons 2\text{H}_2\text{O}$
- (3) Which of the following relations is true for a spherical mirror ?
- (a) $f = \frac{R}{2}$
 - (b) $f = 2R$
 - (c) $f = R$
 - (d) $f = \frac{R}{4}$
- (4) A student obtained a sharp image of a window grill on a screen using a convex lens. For better results, the teacher suggested focusing on a distant tree instead of grill. In which direction should the lens be moved to get the sharp image of the tree?
- (a) away from the screen
 - (b) behind the screen
 - (c) towards the screen
 - (d) far away from the screen
- (5) A straight line plot is obtained when current is plotted against potential difference. Which of the following law is verified ?
- (a) Faraday's law
 - (b) Maxwell's law
 - (c) Ohm's law
 - (d) Fleming's left hand rule

Q.3. Answer the following in short : (Any 5)

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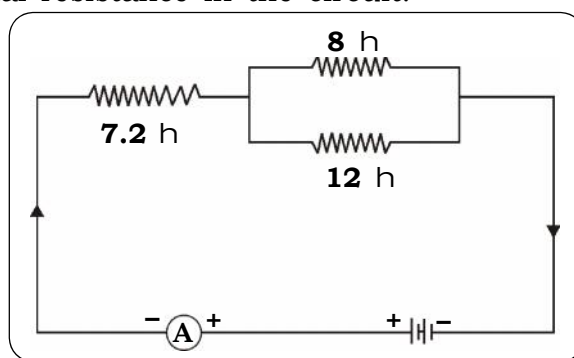
- (1) Explain the following chemical reaction with the help of balanced equation :
- Sulphur dioxide reacts with hydrogen sulphide
- (2) Give scientific reason : Elements in the same group show same valency.
- (3) Distinguish between : Groups and Periods of Modern Periodic table.
- (4) Explain the following chemical reaction with the help of balanced equation :
- Zinc reacts with copper sulphate.

- (5) Give scientific reason :
Connecting wires in a circuit are made of copper and aluminium.
- (6) Distinguish between : Convex mirror and Concave mirror
- (7) A ray diagram for object position beyond $2F_1$ for a convex lens.

Q.4. Answer the following in brief : (Any 5)

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- (1) Explain the zig-zag line in the periodic table.
- (2) What are the steps of writing a chemical equation?
- (3) (a) Give scientific reason :
Physical states of reactants and products are mentioned while writing a chemical equation.
- (b) Define - Reduction reaction
- (4) (a) State Ohm's Law.
(b) Find the resistance of a conductor if 0.24A current is passing through it and a potential difference of 24 V is applied across it.
- (5) Define : (a) Centre of curvature of a lens
(b) Principal axis of a lens
(c) Optical centre of a lens
- (6) Find the total resistance in the circuit.



- (7) Draw the symbols of any three of the following :
- (a) Galvanometer (b) Tap key open
- (c) Wire crossing (d) Plug key closed

Q.5. Answer in detail: (Any 1)

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- (1) Explain myopia with its correction.
- (2) Explain the four blocks of periodic table.

Best Of Luck 🍀