

MT

2017 ____ 1100

Seat No.

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MT - SCIENCE & TECHNOLOGY - I (72) - SEMI PRELIM - II : PAPER - 3

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 element eka-Aluminium is called as
- (2) A ray of light parallel to principal axis after reflection from concave mirror passes through
- (3) The S.I. Unit of resistivity is

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

- (1) $\text{BaSO}_4 + 4\text{C} \rightarrow \text{BaS} + 4\text{CO}$ is an example of reduction reaction.
- (2) Resistivity of pure metals is more than alloys.

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

- (1) Of what is the reddish brown deposit formed on iron nails kept in a solution of copper sulphate ?
(a) Cu_2O (b) Cu (c) CuO (d) CuS
- (2) is a combination reaction.
(a) $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2$
(b) $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
(c) $2\text{HgO} \xrightarrow{\Delta} 2\text{Hg} + \text{O}_2$
(d) $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{CO}_2$

- (3) 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
- (4) When the resistance of the conductor increases, the current.
- (a) increases
 - (b) decreases
 - (c) remains same
 - (d) None of these
- (5) If the resistance is to be increased then the number of resistance should be connected in:
- (a) series
 - (b) parallel
 - (c) mixed arrangement
 - (d) none of the above

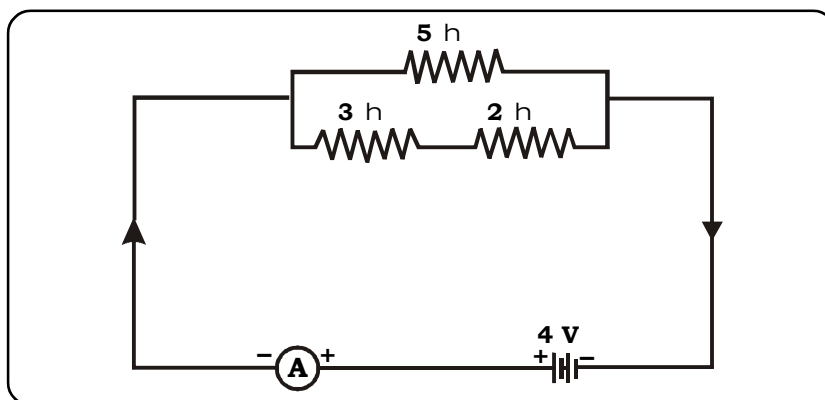
Q.3. Answer the following in short : (Any 5)**10**

- (1) Explain the following chemical reaction with the help of balanced equation :
Sodium metal reacts with ethyl alcohol.
- (2) Give scientific reason :
Metallic character decreases from left to right in a period.
- (3) Distinguish between : s-block elements and p-block elements.
- (4) Explain the following chemical reaction with the help of balanced equation :
Calcium oxide (quick lime) is mixed with water.
- (5) Distinguish between : Voltmeter and ammeter
- (6) A ray diagram for object at centre of curvature for a concave mirror.
- (7) State Joule's Law.

Q.4. Answer the following in brief : (Any 5)**15**

- (1) Explain Dobereiner's law of triads giving example.
- (2) State the neutralization reaction with an example.
- (3) (a) Give scientific reason : Potassium ferrocyanide is stored in dark coloured bottles and kept away from sunlight.
(b) Define : Exothermic reaction

- (4) What are the rules for drawing ray diagrams for the formation of image by spherical mirror ?
- (5) Pritesh has spectacles. The power of the spectacles is -2.5D .
- Name the eye defect.
 - What is wrong with his eyeball?
 - Which spectacles will he use?
- (6) Draw the symbols of any three of the following :
- Galvanometer
 - Tap key open
 - Wire crossing
 - Plug key closed
- (7) Find the total resistance and current in the circuit.



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

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- Explain the sign conventions for reflection by spherical mirrors.
- Explain the term periodic properties and explain the following trends of the periodic table with respect to :
 - Valency
 - Metallic character and Non-metallic character
 - Atomic size.

Best Of Luck 🍀