

# MT

2017 \_\_\_\_ 1100

Seat No. 

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**MT - SCIENCE & TECHNOLOGY - I (72) - SEMI PRELIM - II : PAPER - 6**

**Time : 2 Hours**

**(Pages 3)**

**Max. Marks : 40**

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**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 arrangement of elements in a group of three is called .....
- (2) The least distance of distinct vision is about .....
- (3) 1 kilowatt hr = ..... joules.

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

- (1) (g) indicates the physical state as solid.
- (2) Voltmeter is always connected in series with the device.

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

- (1) To observe the reaction of water on quicklime, .....
  - (a) quicklime is added to water in a test tube.
  - (b) a lot of water is added to quicklime.
  - (c) few drops of water are added to quicklime.
  - (d) none of these.
  
- (2)  $\text{Mg}_{(s)} + 2\text{HCl}_{(aq)} \rightarrow \text{MgCl}_{2(aq)} + \text{H}_{2(g)}$ . What type of reaction is this ?
  - (a) Combination reaction
  - (b) Decomposition reaction
  - (c) Displacement reaction
  - (d) Double displacement reaction

- (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

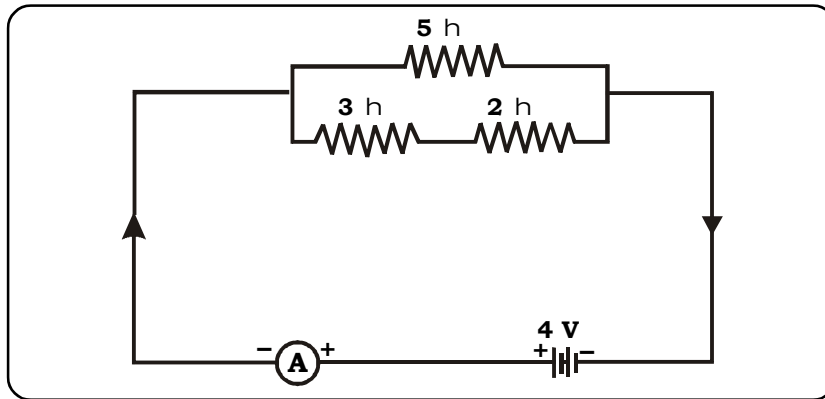
**Q.3. Answer the following in short : (Any 5)****10**

- (1) Explain the following chemical reaction with the help of balanced equation :
- Copper chloride reacts with potassium iodide.
- (2) Give scientific reason : Alkali metals are placed in group 1.
- (3) Distinguish between : Groups and Periods of Modern Periodic table.
- (4) Explain the following chemical reaction with the help of balanced equation :
- Sugar (sucrose) is heated strongly.
- (5) Give scientific reason : Concave mirrors are used in solar devices.
- (6) Distinguish between : Conductors and Insulators.
- (7) A ray diagram for object position at  $F_1$  for a convex lens.

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

- (1) Explain the Modern Periodic Table.
- (2) When edible oil is converted to fats, what reaction is it? Express it in words.
- (3) (a) Give scientific reason : Iron articles rust readily whereas steel which is also made of iron will not undergo corrosion.  
(b) Define : Redox reaction
- (4) What is meant by power of accommodation of eye ?

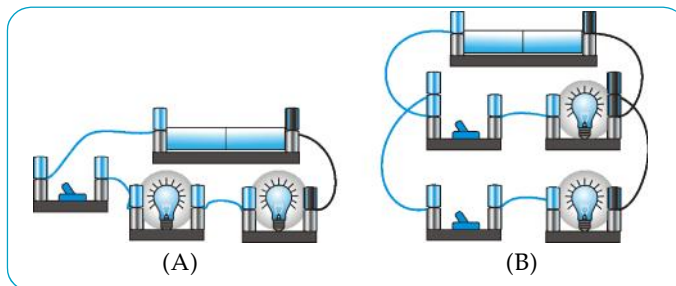
- (5) Fuse is always connected in series. Why? Also state Joule's law ?
- (6) What are the rules for drawing ray diagrams for the formation of image by spherical mirror ?
- (7) Find the total resistance and current in the circuit.



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

5

- (1) Look at the figure and answer the following :



- (i) Name the arrangement in (A)
  - (ii) Name the arrangement in (B)
  - (iii) In which case would the resistance be less ?
  - (iv) In which case would the bulb glow brighter? Why ?
- (2) Explain the four blocks of periodic table.

*Best Of Luck* 🍀