

MT

2017 ____ 1100

Seat No.

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MT - SCIENCE & TECHNOLOGY - I (72) - SEMI PRELIM - II : PAPER - 5

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:

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- (1) The law used by Newlands to arrange elements is called
- (2) The power of a convex lens of focal length 25 cm is
- (3) To increase the effective resistance in a circuit the resistors are connected in

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

- (1) Decomposition of compost is an endothermic reaction.
- (2) The SI unit of charge is volt.

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

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- (1) What is the chemical reaction in which H_2 is lost known as ?
 - (a) Reduction reaction
 - (b) Oxidation reaction
 - (c) Decomposition reaction
 - (d) Displacement reaction
- (2) What type of an example is the reaction of iron nails with copper sulphate solution ?
 - (a) Combination reaction
 - (b) Decomposition reaction
 - (c) Displacement reaction
 - (d) Double displacement reaction

- (3) 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) $\frac{1}{u} - \frac{1}{v} = \frac{1}{f}$
- (4) Which one of the following is true according to Ohm's law ?
- (a) Resistance increases as current increases
 (b) Current increases as resistance increases
 (c) Resistance increases as voltage increases
 (d) $I \rightarrow V$ graph is linear.
- (5) In series combination it remains constant:
- (a) current (b) voltage
 (c) both current and voltage (d) both variable

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

- (1) Explain the following chemical reaction with the help of balanced equation :
 Barium sulphate reacts with carbon.
- (2) Give scientific reason : Inert gases are placed in zero group.
- (3) Distinguish between : Alkali metals and Alkaline earth metals.
- (4) Explain the following chemical reaction with the help of balanced equation :
 Silver bromide is exposed to light.
- (5) Give scientific reason : A simple microscope is used by watch repairers.
- (6) A ray diagram for object position between $2F_1$ and F_1 for a convex lens.
- (7) State the function of iris and ciliary muscles.

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

- (1) Explain the merits of Mendeleev's Periodic Table.
- (2) Paste of substance 'A' is used to decorate the roof of your home.
- (i) Name the substance A and write its formula.
 (ii) Write the reaction of substance A with H_2O .
 State the name of the product B.
 (iii) Where and how is B useful?
- (3) (a) Give scientific reason :
 Grills of doors and windows are always painted before they are used.
 (b) Define : Rancidity

- (4) State the different positions of source of light with respect to concave mirror.
1. In torches 2. Projector lamps 3. Flood light
- (5) (a) Define : Resistivity
(b) P and Q are the two wires of same length and different cross sectional areas and made of same metal. Name the property which is same for both the wires and different for both the wires.
- (6) Define : (a) Centre of curvature of a lens
(b) Principal axis of a lens
(c) Optical centre of a lens
- (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) Find the expression for the resistance connected in parallel.
- (2) Explain the four blocks of periodic table.

Best Of Luck 🍀