

Q.P. SET CODE
A

MT - W

Seat No.

2017 ___ ___ 1100 - **MT - W** - SCIENCE & TECHNOLOGY - I (72) - SET - A (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 :

- (1) Fill in the blanks and rewrite the complete statements : 2**
- (i) Silicon and antimony are
 - (ii) The focal length of a lens is positive.

(2) Match the following : 3

Column 'A'

Column 'B'

- | | |
|----------------|----------------------|
| (i) Sulphur | (a) Lanthanide |
| (ii) Manganese | (b) Non-Metal |
| (iii) Cerium | (c) Transition metal |

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

- (1) In series combination it remains constant
(a) current (b) voltage
(c) both current and voltage (d) both variable

- (2) The litmus paper or the litmus solution is obtained from plants.
(a) Moss (b) Rose
(c) Hibiscus (d) Lichen

- (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) The chemical reaction in which H_2 is lost is known as
- (a) a reduction reaction (b) an oxidation reaction
 - (c) a decomposition reaction (d) a displacement reaction
- (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.2. Answer the following subquestions : (any five)**10**

- (1) A ray diagram for object between F and C for a concave mirror.
- (2) Give scientific reason : Red colour is used in danger signals.
- (3) Define : (a) Optical centre of a lens (b) Focal length of a lens
- (4) Give scientific reason :
Potassium ferrocyanide is stored in dark coloured bottles and kept away from sunlight.
- (5) Explain the following chemical reaction with the help of balanced equation :
Copper oxide reacts with dilute hydrochloric acid.
- (6) What major harm is done to the human beings by air pollution?

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

- (1) (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.
- (2) If sodium chloride is added to silver nitrate solution:
 - (a) which precipitate is formed
 - (b) name the type of reaction
 - (c) write the chemical equation

- (3) Aniket from Std. X uses spectacles. The power of the lenses in his spectacles is -0.5 dioptre.

Answer the following questions :

- (i) State the type of lenses used in his spectacles.
 - (ii) Name the defect of vision Aniket is suffering from.
 - (iii) Find the focal length of the lenses used in his spectacles.
- (4) The rules used for drawing ray diagrams for the formation of an image by a spherical mirror.
- (5) Write four uses of washing soda.
- (6) Suggest measures in the following situations :
- (a) To avoid noise pollution in classroom.
 - (b) To minimize electricity consumption at home.
 - (c) Busing fire crackers in festivals and processions.

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

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- (1) Derive the expression for the resistance connected in parallel.
- (2) Explain how formation of a rainbow occurs with suitable diagram.

Best Of Luck 🍀