

# BOARD QUESTION PAPER : MARCH 2016

## SCIENCE AND TECHNOLOGY

Time: 2 Hours

Total 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.

**SECTION A**

1. (A) (a) **Fill in the blanks:** [3]
- i. The modern periodic table consists of \_\_\_\_\_ periods.
  - ii. The formulae of chloride of metal M is  $MCl_2$ . The metal M belongs to \_\_\_\_\_ group.
  - iii. Corrosion can be prevented by using \_\_\_\_\_ solution.
- (b) **Find the odd one out:** [2]
- i. Voltmeter, ammeter, galvanometer, thermometer.
  - ii. Loudspeaker, bar magnet, electric motor, microphone.
- (B) **Choose the correct alternative and rewrite the following:** [5]
- i. Reaction of iron nails with copper sulphate solution is an example of
 

(A) Combination reaction	(B) Decomposition reaction
(C) Displacement reaction	(D) Double displacement reaction
  - ii. Dilute NaOH can be tested with \_\_\_\_\_.
 

(A) red litmus paper	(B) blue litmus paper
(C) lime water	(D) $Na_2CO_3$
  - iii. In series combination which remains constant?
 

(A) Voltage	(B) Current
(C) Both current and voltage	(D) Both are variables
  - iv. An object of 10 cm is placed in front of a plane mirror. The height of image will be \_\_\_\_\_.
 

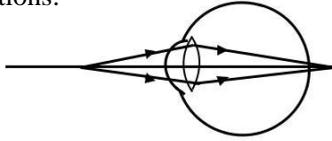
(A) 5 cm	(B) 15 cm
(C) 20 cm	(D) 10 cm
  - v. When a ray of light travels from air to glass slab and strikes the surface of separation at  $90^\circ$ , then it \_\_\_\_\_.
 

(A) bends towards normal	(B) bends away from normal
(C) passes unbent	(D) passes in zigzag way
2. **Answer the following questions (any five):** [10]
- i. Define the following:
    - a. 1 volt PD
    - b. Electric power.
  - ii. What major harm is done to the human beings by air pollution?
  - iii. Calculate the focal length of a corrective lens having power +2D.
  - iv. Write *two applications* of sodium bicarbonate (baking soda).
  - v. A simple microscope is used by watch repairers. Give reason.
  - vi. Draw neat and labelled diagram of pH scale.

**3. Answer the following questions (any five):**

[15]

- i. What are the main features of Mendeleev's periodic table?
- ii. Define 'redox reaction'. Give *one* example.
- iii. Given below is a diagram showing a defect of human eye. Study it and answer the following questions:



- a. Name the defect shown in the figure.
  - b. Give reason for this defect of eye in human being.
  - c. Name the type of lens used to correct the eye defect.
- iv. What is refraction of light? How is it related to refractive index?
  - v. Explain how spectrum is formed.
  - vi. Suggest measures in the following situations:
    - a. To avoid noise pollution in classroom.
    - b. To minimize electricity consumption at home.
    - c. Bursting fire crackers in festivals and processions.

**4. Answer the following question (any one):**

[5]

- i. Find the expression for the resistors connected in series and write the *two* characteristics of it. (Draw figure).
- ii. Explain 'Electric motor' with the help of the following points:
  - a. Draw figure
  - b. Principle of Electric motor
  - c. Name any *four* appliances where electric motor is used.