BOARD QUESTION PAPER : JULY 2015
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: **[2]**

i. Very fine particles mainly scatter _____ light.
ii. 1 mA = _____ A.

(b) Match the column 'A' with column 'B': **[3]**

	Column 'A'		Column 'B'
i.	Eka-boron	1.	Germanium
ii.	Eka-Aluminium	2.	Scandium
iii.	Eka-Silicon	3.	Gallium

(B) Choose the *correct* alternative and rewrite the following: **[5]**

i. Mirror used by a dental surgeon is _____.
(A) plane (B) convex
(C) concave (D) convex and concave

ii. What will happen to the current passing through a resistance, if the potential difference across it is doubled and the resistance is halved?
(A) remains unchanged (B) becomes double
(C) becomes half (D) becomes four times

iii. You are given three equal resistances. In how many combinations can they be arranged?
(A) Three (B) Four (C) Five (D) Two

iv. Inside water, an air bubble behaves _____.
(A) always like a flat plate (B) always like a concave lens
(C) always like a convex lens (D) always like a concave mirror

v. A glass slab is placed in the path of convergent light. The point of convergence of light
(A) moves away from slab (B) moves towards the slab
(C) remains at the same point (D) undergoes lateral shift

2. Answer the following questions (any five): **[10]**

i. State Dobereiner's Triads giving *one* example.
ii. Edible oil is not allowed to stand for a long time in an iron or tin container. Give reasons.
iii. An electric iron rated 750 W is operated for 2 hours/day. How much energy is consumed by the electric iron for 30 days?
iv. Differentiate between conductors and insulators (any *two* points).
v. Give *four* uses of sodium carbonate (washing soda).
vi. Draw a labelled diagram: Dispersion of light through a prism.

3. Answer the following questions (any five): **[15]**

i. 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.

ii. Define:
   a. Chemical combination reaction b. Endothermic reaction
   c. Oxidation reaction
iii. Give the uses of a concave mirror.
iv. Name any *six* domestic appliances based on the heating effect of electric current.
v. Explain: 'How is a rainbow formed'?
vi. If an object is placed in front of a convex lens beyond $2F_1$, then what will be the position, relative size and nature of an image which is formed? Explain with a ray diagram.

4. Answer the following question (any one): **[5]**

i. Explain 'Electric generator' with the help of the following points:
   a. Diagram of an AC Generator with labelling
   b. Principle of an electric generator
   c. Function of slip rings
   d. Any two uses of a generator.
ii. Write about the sources of noise pollution. Give the impact of noise pollution on human body.