

IST SEMESTER 2017 – 18
SCIENCE I

STD: IX
DATE:7/10/17

Marks: 40
TIME:

Q.1.A] Do as directed:

05

1) State whether true or false.

- a) Momentum is necessary to cause a change in force applied on an object.
- b) Bases turn red litmus paper to blue.

2) Define:

- a) Atomic mass number
- b) Momentum

3) Find odd one out:

Bulb, capacitor, resistor, wire

B] Choose the correct option and rewrite the statement:

05

1) The chemical formula of sodium nitrate is _____.

- a) Na_2SO_4 b) $\text{Na}_2(\text{SO}_4)_2$ c) $(\text{Na}_2)_2\text{SO}_4$ d) $(\text{Na}_2)_2(\text{SO}_4)_2$

2) _____ is an acid.

- a) NaOH b) CaO c) H_2CO_3 d) KOH

3) If $R_1=15$ and $R_2=20$ are connected in series. Then their effective resistance (R_s) will be _____.

- a) 35 b) 3.5 c) 25 d) 5

4) If kinetic energy of a man of mass 40kgs while running is 500J, then his velocity is _____.

- a) 25m/s b) 5m/s c) 2.5m/s d) 12.5m/s

5) The momentum of a body of mass 5kg is 10kgm/s, then its velocity is _____.

- a) 2m/s b) 3m/s c) 50m/s d) 5m/s

Q.2] Attempt any five:

10

1) Differentiate between distance and displacement.

2) A ball having a mass of 350gms is falling from a height. How much kinetic energy does it have at the moment when its velocity is 2m/s?

- 3) State and explain Ohms law.
- 4) Give some precautions to be taken while dealing with electricity.
- 5) The element sodium is monovalent. Give scientific reason.
- 6) Draw electronic configuration of magnesium atom.[Atomic Number = 12]
- 7) Differentiate between acids and bases.

Q.3] Attempt any five:

15

- 1) Explain laws of chemical combination with proper experiment. Draw diagram.
- 2) Derive the 1st kinematical equation i.e. equation for velocity – time relation with proper diagram.
- 3) Calculate molecular mass of NaHCO_3 . [Na=23, H=1, C=12, O=16]
- 4) Draw a proper diagram of electronic configuration for formation of compound NaCl.
- 5) If 20V potential difference is applied to a device whose resistance is 100 ohms. Find the current. If the same current is to be passed through a device whose resistance is 400 ohms, then how much potential difference is to be applied?
- 6) Resistances R1, R2, R3 and R4 are connected as shown in the figure. S1 and S2 are two keys. Discuss the current flowing in the circuit in the following cases.

Fig.

- i. Both S_1 and S_2 are closed
 - ii. Both S_1 and S_2 are open
 - iii. S_1 is closed but S_2 is open
- 7) Point out the mistakes in the given figures.

Q.4] Attempt any one:

05

1) If three resistors R_1 , R_2 and R_3 are connected in parallel. Then derive an expression for their effective resistance in parallel combination. Draw proper diagram.

2) Milkha singh is running on a circular track. He runs a distance of 600m in 30s before returning to his original position. What is his average speed and velocity?