


10th Class - Physical Science

Blue print for model paper

| Marks for Questions A.S. | 4 m | 2 m | 1 m | $\frac{1}{2}$ m | Total Marks |
|--------------------------|---------------------|---------------------|---------------------|----------------------|-------------|
| I | 2 (8 m) P-1, C-1 | - | 3 (3 m) P-2, C-1 | 10 (5 m) P-5, C-5 | 16 |
| II | - | 2 (4 m) P-1, C-1 | - | - | 4 |
| III | 1 (4 m) P | - | 2 (2 m) P-1, C-1 | - | 6 |
| IV | - | 2 (4 m) P-1, C-1 | 2 (2 m) P-1, C-1 | - | 6 |
| V | - | 2 (4 m) P-1, C-1 | - | - | 4 |
| VI | 1 (4 m) C | - | - | - | 4 |

No. of questions

④

⑥

⑦

⑩

②⑦

40 m

P - Physics

C - Chemistry

Physical Science
Class 10 - Model Question Paper

I. Answer the following questions in detail. (4 × 4 = 16)

1. Heat is liberated in the reactions where water was added to calcium oxide and hydrochloric acid was added to zinc pieces. Ramu said hence they are same type of chemical reactions. Eshwar was of opinion that the reactions were not similar. What is the basis of Eshwar's opinion. Write equations for the above reactions.

(OR)

Instead of using just plain water to clean clothes, why do we use detergent ? How does it remove dirt in clothes ? Explain.

2. "Efforts of Mendeleev in regard with classification of elements are outstanding". Do you agree or disagree with the above statement. Explain with proper reasons.

(OR)

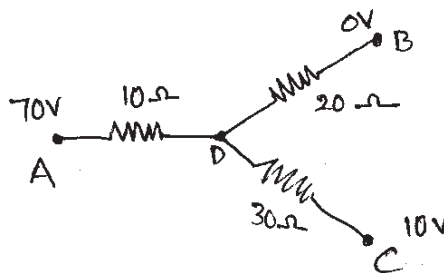
We see many combustion and oxidation reactions in our daily life. Among them every combustion reaction is an oxidation reaction. But not all the oxidation reactions are combustion reaction. Do you agree or disagree with the statement. Explain with proper reasons.

3. We kept an object at one of the centre of curvatures of equal radii of a convex lens. Refractive index of the lens is n . If the lens is in the air explain the following
- What is the focal length ?
 - What is the image distance ?
 - Discuss the nature of the image.

(OR)

Observe the picture. The values of potential differences at A, B, C are 70V, 0V and 10V respectively.

- What is the potential at D ?
- Find the ratio of the flow of current in AD, DB, DC





4. Values of focal lengths are not written on the concave mirrors you have. What tools do you need to find their focal lengths experimentally. How do you conduct the experiment ?

(OR)

Rama wanted to prepare lid with high specific heat to use on cooking utensil. What tools does she need to find the specific heat of aluminium and copper ? How should she conduct the experiment.

II. Answer the following questions briefly.

5. A mettalic spring is hung to heat resistant material. Imagine what happens if the two ends of the vertically hanging spring are connected to a battery and switch in a circuit and the switch is put on.
6. Substance A turned blue litmus paper to red - Substance B turned red litmus paper to blue. What products could for in a reaction between A and B. Give reasons.
7. The electromotive force generated in a coil does not depend on the resistance of the coil. Rayudu read this in a book. How do you analyse whether the above information is correct or not.
8. a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$ b) $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$

We can see that number of carbons and hydrogens is same in both the substances shown above. What do you understand by the given shapes. Explain.

9. Show with the help of a diagram, how to form a circuit to compare the resistances of different materials of same length and cross section area.
10. Show with the help of a diagram, a molecule in which porbitals of one of the atoms form covalent bond with S orbitals of other atoms.

III. Answer the following in one or two sentences.

(7 × 1 = 7)

11. 4 kg of water is at 100° C temperature. How much heat energy is required for the whole water to evaporate (water's latent heat of evaporation is 540 cal/gm)
12. In which condition the incident ray and refracted ray are equal ?



13. You have conducted experiments in which a piece of Zn reacts with HCl and NaOH separately. What is the common aspect you've observed in the experiment.
14. What is the main thing you've observed in the experiment to observe the process of melting of ice i.e from melting of ice till it became water.
15. Based on the following electronic configuration choose the atom that forms an ion. Give reason.
16. Observe the following table.

| Material | Ice | Water | Benzene | Carbondisulphide |
|------------------|------|-------|---------|------------------|
| Refractive index | 1.31 | 1.33 | 1.5 | 1.63 |

Based on the above values mention the material in which light has the least speed.

17. Observe the following table.

| Atom of element | Sodium | Aluminium | Potassium |
|-----------------|--------|-----------|-----------|
| Atomic number | 11 | 13 | 19 |

Based on the information above what can you say about the size of the atoms ?

IV. Choose the correct answer.

(10 × 1/2 = 5)

18. Which one of the following true for two materials at same temperature in different vessels.
- a) they are in thermal equilibrium
 - b) the value of their heat content is equal.
 - c) We can say the value of their heat contents and masses based only on specific heat.
 - d) If 100 ml water is added to two vessels, then after some time their temperature will be same.
19. Heat of resistance increases by adding resistance to a battery. Which of the following values does not change.
- a) electron drift speed
 - b) specific resistance
 - c) resistance
 - d) electron density

