

# S.S.C PUBLIC EXAMINATIONS

## MODEL PAPER\_I

CLASS : X (E.M)  
PARTS A &B

### PHYSICAL SCIENCES

TIME : 2h 45Min.  
MAX. MARKS: 40

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#### **Instructions:**

1. Read the whole question paper and understand every question thoroughly without writing anything and 15 minutes of time is allotted for this.
  2. Answer the questions under **Part – A** on a separate answer book.
  3. Write the answers to the questions under **Part – B** on the question paper itself and attach it to the answer book of **Part –A**
  4. Answer all questions from the given three **Sections – I, II, and III** of **Part – A**
  5. In **section III**, every question has **internal choice**, answer any one.
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#### **Part – A**

Time : 2 Hrs

Marks : 35

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#### **SECTION – I**

**7 X 1 = 7**

#### **Note:**

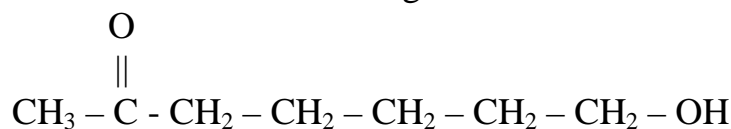
1. Answer **ALL** questions.
2. Each question carries **ONE** mark
3. Write answers in 1 - 2 sentences.

1. At what distance do the rays from infinite distance falling on a concave mirror of radius of curvature 40cm will converge in front of the mirror?
2. While testing a solution, it turns red litmus into blue. What will be the range of PH of this solution?
3. What is the difference between the Orbit and Orbital of an atom?
4. Mention the molecule with polar triangular shape and draw its shape?
5. An electric circuit is arranged with  $15\Omega$  resistance to 5V battery. What is the amount of current passing through the circuit?
6. Draw the diagram showing the hypothetical experiment to understand Faraday's law of electromagnetic induction.
7. What are the important parts of a furnace which is used to conduct Pyrochemical reactions in metallurgy.

**SECTION – II****6 X 2 = 12****Note:**

1. Answer **ALL** questions.
2. Each question carries **TWO** marks
3. Write answers in 4 – 5 sentences.

8. Mention any two situations where we use concave and convex mirrors in our daily life.
9. An object is placed at a distance of 30cm from a concave lens of focal length 20cm. Find the magnification of the image formed.
10. Mention any two daily life applications of dispersion of light.
11. Draw the experimental set up to conduct the experiment for study of force exerted on a conducting wire placed in a magnetic field.
12. Explain the process of purification of blister copper.
13. Write the IUPAC name of the following:

**SECTION – III****4 X 4 = 16****Note:**

1. Answer **ALL** questions
2. Each question carries **FOUR** marks
3. There is internal choice for each question, only one option from each question is to be attempted.
4. Write answers in 8-10 sentences.

14. Draw the ray diagram for the following situations for a convex lens:
  - i) To form pointed image.
  - ii) To form a virtual image.

(or)

A student observed that her grandfather is unable to read the newspaper. What is his defect of vision? Explain the defect and its correction by a diagram.

15. Observe the following table:

| Element                  | A   | B   | C     | D     |
|--------------------------|-----|-----|-------|-------|
| Electronic Configuration | 2,2 | 2,8 | 2,8,2 | 2,8,4 |

- i) Which of the above is inert gas? What is its name?
- ii) Which element belongs to same group?
- iii) Which element belongs to same period?
- iv) Which block does the element 'D' belong to?

(or)

| Substance | Lemon juice | Distilled water | Coffee | Washing Soda | Baking Soda |
|-----------|-------------|-----------------|--------|--------------|-------------|
| PH Value  | 2.1         | 7               | 4.8    | 12.8         | 8.1         |

- i) Which of the above substances are strong acid and strong base?
- ii) What happens if Phenolphthalein is added to the solution of baking soda?
- iii) Which substance does not show electrical conductivity?
- iv) What happens to the PH of distilled water when lemon juice is added to it?

16. What is Hybridization? Explain the formation of Boron tri fluoride by hybridization?

(or)

Write Lenz's law. Write how Lenz's law explains that electromagnetic induction follows the law of conservation of energy?

17. Write the list of materials required and procedure of experiment that you have conducted to form a rainbow in the class room.

(or)

Write the list of material required and precautions to be observed to study the conditions suitable for rusting of iron.

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## PART – B

Attach **Part – B** question paper to the main answer book of **Part – A**

**Time : 30 Minutes**

**Marks : 5**

### Instructions:

1. Answer ALL questions
2. Each question carries  $\frac{1}{2}$  marks
3. Answers are to be written in the question paper only
4. Marks will not be awarded in case of any overwriting, rewriting or erased answers.
5. Write CAPITAL LETTERS showing the correct answer for the following questions in the brackets provided against each question.

1. A convex mirror is used as rear view mirror for vehicles, because ( )  
A) Magnified and inverted image is formed  
B) Diminished and erected image is formed  
C) Diminished and inverted image is formed  
D) Magnified and erected image is formed
2. Which of the following is used by doctors to treat fractured bones ( )  
A)  $\text{CaSO}_4$  B)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  C)  $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$  D)  $\text{CaOCl}_2$
3. The refractive index of a prism whose angle is  $60^\circ$  and angle of minimum deviation is  $30^\circ$  is ( )  
A)  $\sqrt{2}$  B)  $1/\sqrt{2}$  C) 0.5 D) 1
4. The bond formed by axial overlapping of two orbitals is ( )  
A)  $\sigma$  – bond B)  $\pi$  - bond C) Covalent bond D) Ionic bond
5. which of the following element has highest Ionization energy ( )  
A) C B) Si C) Ge D) Sn
6. The theory which explained the shapes of atoms is ( )  
A) VSEPR theory B) Valence bond theory  
C) Lewis dot theory D) Ion theory
7. The value of  $I_3$  in the adjacent figure is ( )  
A) 20A B) 15A C) 17A D) 30A
8. The value of 'h' in  $E = h\nu$  is ( )  
A)  $6.626 \times 10^{-34}$  J.Sec B)  $6.626 \times 10^{-24}$  J.Sec  
C)  $6.626 \times 10^{34}$  J.Sec D)  $6.626 \times 10^{24}$  J.Sec
9. Aldehyde is ( )  
A)  $\text{C}_2\text{H}_5\text{CHO}$  B)  $\text{C}_2\text{H}_5\text{OH}$  C)  $\text{C}_2\text{H}_5\text{COOH}$  D)  $\text{C}_2\text{H}_5\text{COCH}_3$
10. Which of the following doesnot belong to halogen family ( )  
A) F B) Al C) Cl D) Br

