

**BOARD OF SECONDARY EDUCATION (TELANGANA)**  
**SUMMATIVE ASSESSMENT – II**  
**TENTH CLASS GENERAL SCIENCE**  
**PHYSICAL SCIENCE MODEL PAPER**  
**PAPER – I (ENGLISH VERSION)**

Time: 2 hrs. 45 mins.

PART – A & B

Maximum Marks: 40

**INSTRUCTIONS:**

- i) In the time duration of 2 hrs. 45 mins. 15 minutes of time is allotted to read and understand the question paper.
- ii) Answer the questions under PART – A on separate answer book.
- iii) Write the answers to the questions under PART – B on the question paper itself and attach it to the answer book of PART – A.

Time: 2 hrs.

PART – A

Marks: 35

**INSTRUCTIONS:**

- i) PART – A comprises of three Sections I, II, III.
- ii) All the questions are compulsory.
- iii) There is no overall choice. However, there is an Internal Choice to the questions under Section III.

**SECTION – I**

**INSTRUCTIONS:**

- i) Answer ALL the questions.
- ii) Each question carries ONE Mark.
- iii) Write the answers in 1 – 2 sentences.

7 × 1 = 7

1. If the focal length of a concave mirror is 12 cm., what is its radius of curvature?
2. What happens when current carrying coil is placed in a uniform magnetic field?
3. If  $l = 3$ , what are the  $m_l$  – values.
4. Write the physical state of reactants and products in the following reaction.  
$$6 \text{CO}_2 + 6 \text{H}_2\text{O} \longrightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2$$
5. Draw a figure to show the behaviour of a parallel beam of rays fall on a concave lens making some angle with principal axis.
6. Draw the atomic structure of  $\text{BF}_3$  and indicate its bond angle?
7. Write the uses of Ethyl alcohol.

SECTION - II

INSTRUCTIONS:

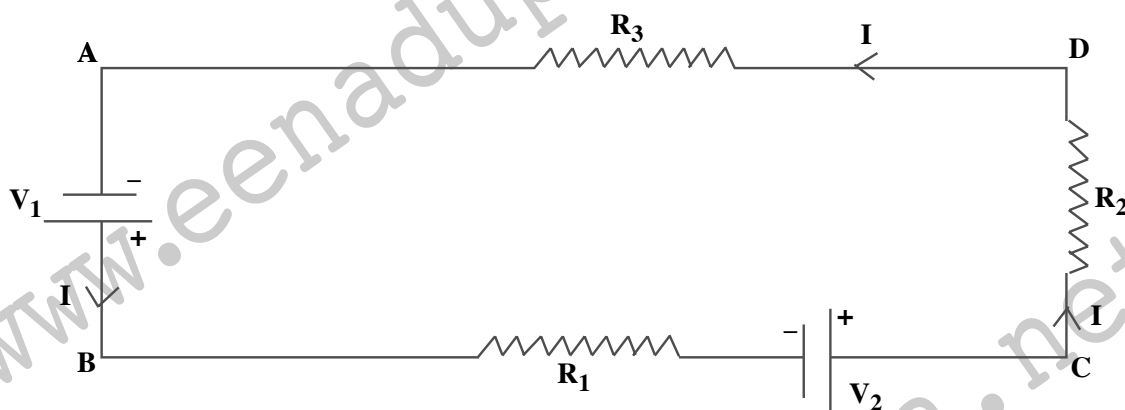
i) Answer ALL the questions.

ii) Each question carries TWO Mark.

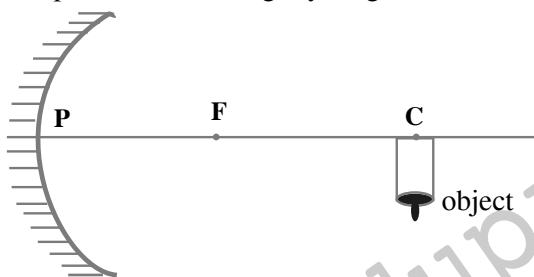
iii) Write the answers in 4 - 5 sentences.

6 × 2 = 12

8. The gas 'X', which is obtained at the anode during the electrolysis of sodium chloride solution, produces a compound 'Y' on reacting with dry Calcium hydroxide. The compound 'Y' is used for disinfecting drinking water to make it free of germs. Name X, Y and write the chemical equation for the reaction between them.
9. What happens to the image distance in the eye when we increase the distance of an object from the eye?
10. Write an Experiment to find the change of colour in the reaction of an acid with a base (Neutralization) reaction.
11. Find the resultant potential difference from the given figure based on loops law.



12. Complete the following ray diagram and identify the position of the image.



13. What are the uses of Bleaching powder?

SECTION - III

INSTRUCTIONS:

i) Answer ALL the questions.

ii) Each question carries FOUR Mark.

iii) There is Internal Choice for each question. Only one option from each question is to be attempted.

iv) Answer each question in 8 - 10 sentences.

4 × 4 = 16

14. a) Describe the image formation by a convex lens for various positions of the object.

(OR)

b) There resistors  $2\ \Omega$ ,  $4\ \Omega$ ,  $8\ \Omega$  are connected in (a) series, (b) parallel. Find the resultant resistance in the circuit.

15. a) Explain how does the quantum numbers be useful to understand atomic structure.

(OR)

b) Explain metallic corrosion? mention the measures methods to be taken to prevent metallic corrosion.

16. a) Which experiment do you suggest to understand faraday's law? Which instruments are required? What suggestions do you give to get good results of the experiment? mention the precautions also.

(OR)

b) Describe an experimental procedure with the help of a diagram to show that "every compound which has hydrogen is not an acid".

17. a) Complete the following table for the positions of object placed as in the different places on the principle of axis of a concave mirror.

S.No.	Position of the object	Position of image	Enlarged/ Diminished	Erect or Inverted	Real or Virtual
1	Between pole and F				
2	at F				
3	Between F and C				
4	at C				

(OR)

b) Atomic sizes of few elements of 2<sup>nd</sup> period are given in the table. Observe the table and answer the questions given below.

Element of 2 <sup>nd</sup> period	F	B	Be	O	N	Li	C
Atomic size (in pm)	64	88	111	66	74	152	77

i) Arrange the elements in increasing order of their atomic sizes.

ii) Which is the element nearest to the electronic configuration of a Noble gas in II period.

iii) Which is the outermost orbit of all these elements?

iv) Whose atomic size among Be and C is more?

INSTRUCTIONS:

i) Answer ALL the questions.

ii) Each question carries  $\frac{1}{2}$  mark.

iii) Answers are to be written in question paper only.

iv) Marks will not be awarded in any case of over writing, rewriting, erased answers.

v) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them.  $10 \times \frac{1}{2} = 5$

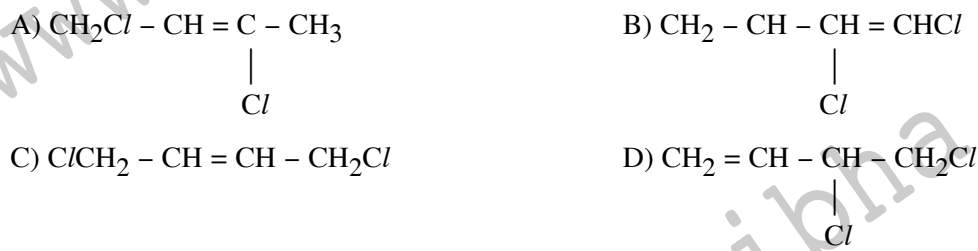
1. The number of molecules of  $\text{CO}_2$  in 4.4 g of the gas at STP ( )

- A)  $6.02 \times 10^{23}$       B)  $6.02 \times 10^{24}$       C)  $6.02 \times 10^{20}$       D)  $6.02 \times 10^{22}$

2. Which of the following is violation of Paulis exclusion principal? ( )

<p>A) <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2s</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑↓</td></tr></table>      <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2p</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑↓</td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p>	2s	↑↓	2p	↑↓			<p>B) <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2s</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑↑</td></tr></table>      <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2p</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑</td><td style="border: 1px solid black; padding: 2px;">↑</td><td style="border: 1px solid black; padding: 2px;">↑</td></tr></table></p>	2s	↑↑	2p	↑	↑	↑
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<p>C) <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2s</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑↓</td></tr></table>      <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2p</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑</td><td style="border: 1px solid black; padding: 2px;">↓</td><td style="border: 1px solid black; padding: 2px;">↑</td></tr></table></p>	2s	↑↓	2p	↑	↓	↑	<p>D) <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2s</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑</td></tr></table>      <table style="display: inline-table; vertical-align: middle;"><tr><td style="border: 1px solid black; padding: 2px;">2p</td></tr><tr><td style="border: 1px solid black; padding: 2px;">↑</td><td style="border: 1px solid black; padding: 2px;">↑</td><td style="border: 1px solid black; padding: 2px;">↑</td></tr></table></p>	2s	↑	2p	↑	↑	↑
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3. The structure of the 3, 4 – di chloro 1 – butene is ( )





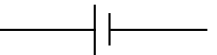

4. The order of the electron affinity of halogens is ( )

- A)  $\text{Cl} > \text{F} > \text{Br} < \text{I}$       B)  $\text{F} < \text{Cl} < \text{Br} < \text{I}$   
 C)  $\text{Cl} < \text{F} > \text{Br} < \text{I}$       D)  $\text{Cl} > \text{F} > \text{Br} > \text{I}$

5. The radii curvature of a double convex lens are 10 cm. and 10 cm. Its refractive index is 1.5 the focal length is ( )

- A) 0.1 cm      B) 0.01 cm      C) 10 cm      D) None

6. Match the following. ( )

1) Battery	a) 
2) Plug key	b) 
3) Resistance	c) 
4) Fuse	d) 

- A) 1-a, 2-b, 3-c, 4-d      B) 1-d, 2-a, 3-b, 4-c  
 C) 1-c, 2-b, 3-a, 4-d      D) 1-c, 2-d, 3-a, 4-b

7. The distance between the eyelens and retina is ( )

- A) 2.0 cm      B) 2.5 cm      C) 3.0 cm      D) 3.5 cm

8. The mathematical form of Faraday's law of electromagnetic induction is ( )
- A)  $\epsilon = \frac{\Delta\Phi}{\Delta t}$       B)  $\epsilon = \Delta\Phi + \Delta t$       C)  $\epsilon = \frac{\Delta t}{\Delta\Phi}$       D)  $\epsilon = \Delta\Phi \cdot \Delta t$
9. Which of the following works on the rule of magnetic induction? ( )
- A) Induction stove      B) Tape recorder  
C) ATM card      D) All the above
10. Which is used in cough syrups? ( )
- A) Methanol      B) Ethanol      C) Gasoline      D) Iodine

ANSWERS

1-D; 2-B; 3-D; 4-D; 5-C; 6-D; 7-B; 8-A; 9-D; 10-B.

Writer: K. Gagan Kumar