

**BOARD OF SECONDARY EDUCATION (AP)**  
**SUMMATIVE ASSESSMENT – III**  
**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 a 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: 30**

**SECTION – I**

**INSTRUCTIONS:**

- i) Answer ALL the questions.
  - ii) Each question carries ONE Mark.
  - iii) Write the answers in 1 – 2 sentences.  $4 \times 1 = 4$
1. Why is it difficult to shoot a fish swimming in water?
  2. On which principle a generator works?
  3. What are the uses of fullerenes?
  4. Explain the reason of introducing spin quantum number.

**SECTION – II**

**INSTRUCTIONS:**

- i) Answer ALL the questions.
  - ii) Each question carries TWO Marks.
  - iii) Answer the questions in 4 – 5 sentences.  $5 \times 2 = 10$
5. Draw the electronic dot structure of ethane molecule.
  6. Explain with the help of a chemical equation, how an addition reaction is used in vegetable ghee industry.
  7. Why Mendeleev had to leave certain gaps in his periodic table?
  8. A prism of angle  $A = 60^\circ$  produces an angle of minimum deviation  $D = 30^\circ$ . Find the refractive index of the material of the prism.
  9. Why does the sky appear white some times?

**SECTION - III**

**INSTRUCTIONS:**

- i) Answer ALL the questions.
- ii) Each question carries FOUR Marks.
- 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

10. Explain Bohr – Sommerfeld model of an atom.

(OR)

Draw Moeller's chart showing the increasing order of energy levels of various orbitals.

11. Is condensation a warming process or a cooling process? Explain with an example.

(OR)

Describe how do you find the focal length of a concave mirror.

12. Write at least 8 various applications of Faraday's law of electromagnetic induction in daily life.

(OR)

What is presbyopia? How is it corrected?

13. Distinguish between esterification and saponification reactions of organic compounds.

(OR)

Explain the formation of Sodium chloride and Calcium oxide on the basis of the concept of electron transfer from one atom to another atom.

## 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 and rewriting or 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.  $20 \times \frac{1}{2} = 10$

14. 1) The light ray must travel from denser medium to rarer medium to form total internal reflection.  
 2) The angle of incidence in denser medium should be greater than the critical angle for the pair of media in contact. ( )

A) 1, 2 are true

B) 1 is true and 2 is false

C) 1, 2 are false

D) 1 is false and 2 is true

15. Match the following. ( )

i) Electric Power (P)

P)  $\frac{V^2}{P}$ 

ii) Resistance (R)

Q)  $\frac{RA}{l}$ iii) Specific resistance ( $\rho$ )R)  $\frac{V^2}{R}$ 

iv) Electric potential (V)

S)  $\frac{I}{R}$ 

A) i - P, ii - Q, iii - R, iv - S

B) i - R, ii - P, iii - Q, iv - S

C) i - Q, ii - P, iii - S, iv - R

D) i - S, ii - P, iii - R, iv - Q

16. Stationary states are also called as ..... ( )

A) Shells

B) Sub – energy levels

C) Energy levels

D) Sub – stationary shells

17.  $X H_2 + Y O_2 \longrightarrow Z H_2O$ , The values of X, Y, Z are ( )

A) X = 2, Y = 2, Z = 1

B) X = 1, Y = 2, Z = 3

C) X = 3, Y = 2, Z = 1

D) X = 2, Y = 1, Z = 2

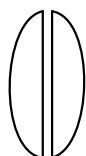
18. A convex lens of focal length  $f = 6$  cm is cut into two halves as shown in the figure. Then the focal length of each part is ( )

A) 3 cm

B) 12 cm

C) 18 cm

D) 9 cm



19. In the following Alkane is ( )

A)  $C_4H_{10}$ B)  $C_6H_6$ C)  $C_4H_8$ D)  $C_4H_6$

20. Overloading is a phenomenon of more ( )  
 A) Resistance B) Voltage  
 C) Current D) Resistivity
21. These group elements belong to Chalcogen family. ( )  
 A) Group I A B) Group VII A  
 C) Group VIII A D) Group VI A
22. Match the following. ( )  
 i) Quantum Mechanical model P) Max Planck  
 ii) Quantum theory Q) Niels Bohr  
 iii) Earliest atomic model R) Erwin Schrodinger  
 iv) Stationary orbits S) J.J.Thomson  
 A) i - P, ii - Q, iii - R, iv - S B) i - R, ii - P, iii - S, iv - Q  
 C) i - Q, ii - P, iii - S, iv - R D) i - S, ii - P, iii - R, iv - Q
23. Your image is always erect in this mirror ( )  
 A) Concave B) Plane  
 C) Convex D) Either Convex or Plane
24. A thick wire has ..... resistance than a thin wire. ( )  
 A) equal B) more C) less D) very high
25. A uniform conductor of resistance 50  $\Omega$  is cut in to 5 equal parts. If these are connected in parallel their resultant resistance is ( )  
 A) 2  $\Omega$  B) 10  $\Omega$  C) 250  $\Omega$  D) 12  $\Omega$
26. When is the value of focal length of a lens equal to image distance? ( )  
 A) when rays pass through optic centre  
 B) when rays pass through the focus  
 C) when incident rays are parallel to principal axis  
 D) None of the above
27. Magnetic field is produced by the flow of current in a straight conductor. This phenomenon was discovered by ( )  
 A) Oersted B) Faraday C) Maxwell D) Coulomb
28. IUPAC name of glycerol is ..... ( )  
 A) Propanol B) Propane - 1, 2, 3 - tri - ol  
 C) Propane - 1, 2, 3 - di - ol D) Propane
29. The total number of electrons that take part in forming the bonds in  $N_2$  is ( )  
 A) 4 B) 10 C) 2 D) 6
30. Find the odd one among the following. ( )  
 1) Sodium 2) Rubidium 3) Magnesium 4) Silicon  
 A) 1 B) 2 C) 4 D) 3

31. Arrange the following in a systematic order. ( )  
P) Red                      Q) Blue                      R) Yellow                      S) Violet  
A) S, P, Q, R                      B) S, Q, R, P                      C) P, Q, R, S                      D) Q, P, R, S
32. Refractive index of a denser medium  $n_1 = \frac{2}{5}$  and rarer medium  $n_2 = \frac{\sqrt{3}}{5}$ . So the critical angle for the denser medium is ..... ( )  
A)  $0^\circ$                       B)  $60^\circ$                       C)  $30^\circ$                       D)  $45^\circ$
33. Elements from  $90^{\text{Th}}$  to  $103^{\text{Lr}}$  are called ( )  
A) Lanthanides                      B) transition elements  
C) actinides                      D) inert gases

**PART - B**

**ANSWERS**

14-A; 15-B; 16-C; 17-D; 18-B; 19-A; 20-C; 21-D; 22-B; 23-D; 24-C; 25-A; 26-C; 27-A; 28-B; 29-D; 30-C; 31-B; 32-B; 33-C.

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