

**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 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 × 1 = 4
1. Find the absolute refractive index of water, if its critical angle is  $48.5^\circ$  ( $\sin 48.5^\circ = 0.75$ ).
  2. What is the use of magnetic field lines?
  3. Which electronic shell is at a higher energy level K or L?
  4. How do you appreciate the role of ethanol as a fuel in our daily life?

**SECTION – II**

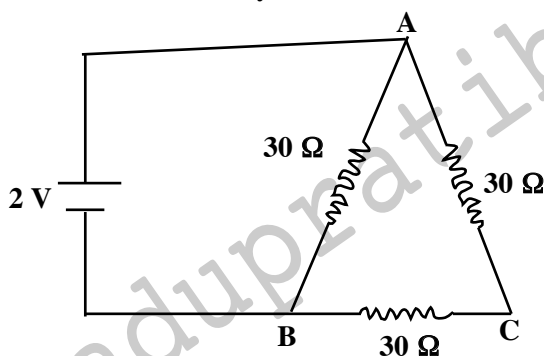
**INSTRUCTIONS:**

- i) Answer ALL the questions.
  - ii) Each question carries TWO Marks.
  - iii) Answer the questions in 4 – 5 sentences. 5 × 2 = 10
5. What are hydrophilic and hydrophobic parts in soaps?
  6. Which method do you suggest for extraction of high reactivity metals. Why?
  7. How can we test the pH value of the soil?
  8. What is the focal length of double convex lens kept in air with two spherical surfaces of radii  $R_1 = 30$  cm and  $R_2 = 60$  cm? (refractive index of the material of the lens  $n = 1.5$ )
  9. Does eye lens form a real image or virtual image? Explain it.

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.  $4 \times 4 = 16$
10. Find the equivalent resistance between any two terminals and find the total current flowing through the circuit.



(OR)

What factors influence the evaporation process? Explain with the help of an experiment.

11. How do you appreciate the role of spherical mirrors in our daily life?

(OR)

What are the materials required for doing Oersted experiment of electromagnetism. Write the procedure of the experiment. What do you understand from this experiment?

12. A yellow powder 'X' gives a pungent smell when left in open. It is a good oxidising agent and is used for bleaching cotton linen in textile industries. Identify 'X' and give its method of preparation. What is its commercial name?

(OR)

Explain VSEPR theory.

13. What are the different types of chemical decomposition reactions?

Siva dissociated water in to hydrogen and oxygen gases. Draw the diagram for this reaction. What are the apparatus required for this reaction?

(OR)

In an atom the number of electrons in N – shell is equal to the number of electrons in K, L, M shells. Answer the following questions.



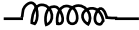
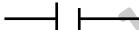
- a) Which is the outermost shell?
- b) How many electrons are there in its outermost shell?
- c) What is the atomic number?
- d) Write the electronic configuration of the element?

## 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 any 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. Which of the following is not a hydrocarbon? ( )  
 A) R – CH<sub>3</sub>                      B) RCH = CH<sub>3</sub>                      C) RCH<sub>3</sub>OH                      D) CH<sub>3</sub>CH = CH<sub>2</sub>
15. Magnification m = ..... ( )  
 A)  $\frac{\text{size of image}}{\text{size of object}}$                       B)  $\frac{\text{size of object}}{\text{size of image}}$                       C)  $\frac{u}{v}$                       D)  $\frac{-u}{v}$
16.  $2 \text{PbO}_{(s)} + \text{C}_{(s)} \longrightarrow 2 \text{Pb}_{(s)} + \text{CO}_{2(g)}$   
 Which of the following statements are correct? ( )  
 i) Lead is reduced                      ii) Carbon dioxide is oxidized  
 iii) Carbon is oxidized                      iv) Lead oxide is reduced  
 A) i and ii                      B) ii and iii                      C) iii and iv                      D) i and iv
17. Our body works with in the pH range of ..... ( )  
 A) 8.5 to 9.5                      B) 7.0 to 7.8                      C) 6.3 to 7.0                      D) 1.0 to 3
18. Match the following. ( )  
 1) Resistance                      P) No units  
 2) Specific resistance                      Q) Ohm  
 3) Refractive index                      R) Ohm – metre  
 A) 1 – P, 2 – Q, 3 – R                      B) 1 – Q, 2 – R, 3 – P  
 C) 1 – R, 2 – P, 3 – Q                      D) 1 – R, 2 – Q, 3 – P
19. Find the odd one among the following. ( )  
 A)  $E = hv$                       B)  $h = \frac{E}{\nu}$                       C)  $\nu = \frac{E}{h}$                       D)  $\nu = E h$
20. Relation between radius of curvature (r) and focal length (f) of a concave mirror ( )  
 A)  $r = 2f$                       B)  $r = f$                       C)  $f = 2r$                       D)  $f + r = 2$
21. 1) Pyrolusite                      X) Ca ( )  
 2) Gypsum                      Y) Mg  
 3) Carnallite                      Z) Mn  
 A) 1 – Z, 2 – Y, 3 – X                      B) 1 – Y, 2 – Z, 3 – X  
 C) 1 – Z, 2 – X, 3 – Y                      D) 1 – X, 2 – Y, 3 – Z

22. This configuration violates ( )
- 
- A) Aufbau's Principle  
B) Hund's Principle  
C) Pauli's exclusion Principle  
D) All the above
23. Symbol for resistance ( )
- A)  B)  C)  D) (·)
24.  $2 \text{Fe}_2\text{O}_{3(s)} + X \text{C}_{(s)} \longrightarrow Y \text{Fe}_{(s)} + 3 \text{CO}_{2(g)}$  In this equation, X, Y values are ( )
- A) X = 4, Y = 3  
B) X = 3, Y = 4  
C) X = 2, Y = 3  
D) X = 3, Y = 2
25. Arrange the following in a systematic order. ( )
- Bohr's model of hydrogen atom
  - Quantum mechanical model of atom
  - J.J. Thomson's model of the atom
  - Bohr – Sommerfeld model of the atom
- A) 1, 2, 3, 4  
B) 2, 3, 1, 4  
C) 3, 1, 4, 2  
D) 1, 4, 3, 2
26. X) A real image can be caught on a screen. ( )  
Y) A virtual image can be seen with naked eye.
- A) X is true, Y is false  
B) X and Y are false  
C) X is false and Y is true  
D) Both X and Y are true
27. If  $l = 2$ , number of values for  $m_l$  is ( )
- A) 7  
B) 5  
C) 3  
D) 1
28. pH value of coffee is ( )
- A) 0  
B) 4  
C) 4.8  
D) 6.6
29. A lens has a power of 2 D. Its focal length is ( )
- A) 5 cm  
B) 25 cm  
C) 50 cm  
D) 2.5 cm
30. Three bodies A, B and C are in thermal equilibrium. The temperature of B is  $45^\circ\text{C}$  then the temperature of C is ( )
- A)  $40^\circ\text{C}$   
B)  $50^\circ\text{C}$   
C)  $55^\circ\text{C}$   
D)  $45^\circ\text{C}$
31. The  $\sigma$  bond is stronger than  $\pi$  bond due to
- A)  $\sigma$  is formed due to overlapping  
B)  $\sigma$  is formed by end – on – end overlapping  
C) the extent of overlapping is more in  $\sigma$  bond than in  $\pi$  bond  
D)  $\pi$  bond cannot exist independently
32. A 10 W LED bulb is used 10 hours per day. Find the electric energy consumed in 10 days. ( )
- i) 1 kWh  
ii)  $36 \times 10^5 \text{ J}$   
iii)  $3.6 \times 10^5 \text{ J}$   
iv) 1000 kWh
- A) i  
B) i, ii  
C) iv, iii  
D) ii, iv

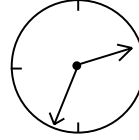
33. The figure given below shows the image of a clock as seen in a plane mirror. The correct time is

A) 2.25

B) 2.35

C) 6.45

D) 9.25



**PART - B**

**ANSWERS**

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

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