# MODEL PAPER-4 S.S.C. PUBLIC EXAMINATIONS-2021 PHYSICAL SCIENCE (English Medium)

Class: X

(Max.Marks: 50) Time: 2 Hr. 45 Min

- **Instructions:** There are four sections an 33 questions in this papers. 1. Answer should be written in a given answer booklet 2. 3. There is internal choice in Section-IV Write all the questions visible and legibly. 4. 5. 15 Minutes are given for reading the questions paper and 2.30 hours for given for answering questions. **SECTION-1** NOTE:1. Answer all the questions/ 2. Each question carries <sup>1</sup>/<sub>2</sub> mark  $12 \times \frac{1}{2} = 6 M$ 1. The CGS unit of heat is ..... 2. Complete the following equation NaHCO<sub>3</sub> + Hcl  $\longrightarrow$  Nacl + ..... + CO<sub>2</sub> 3. Match the following Refractive index Material Medium 1. Kerosene 1.52 ſ a. 2. Crown glass ſ b. 1.71 c. 1.44 Identify the following lens 4. b) Plano convex a) Bi convex c) Bi concave d) Concavo-convex The angle between the incident ray and normal is called ..... 5. The value of plank's constant (h) is 6. a) 6.626 x 10<sup>-27</sup> erg.sec b) 6.626 x10<sup>-34</sup> JS c) 6.626x10<sup>-8</sup> JS d) a & b ..... was the basis of the classifications proposed by Dobberiner, Newlands and 7. Mendeleeff. Match the following 8. Molecule Bond Angle 1. Be Cl<sub>2</sub> a) 120° [ 2. BF<sub>3</sub> ſ 1 b) 109º 28' c) 180<sup>0</sup> A : V-I graph for Si is non linear 9. R : Semi conductors are non ohmic. a) Both A, R are True, R is not correct explanation
  - b) Both A, R are true, R is correct explanation of A

c) Cas

- c) A is True, R is false
- d) A is false, R is true

### 10. The S.I. unit of magnetic flux is .....

11. Formula of cinnabar a) pbs b) Hgs

b)  $CH_3 - CH - CH_2 - CH_3$ 

 $CH_3$ 

- 12. Structure of Cyclo pentane
  - a) CH<sub>3</sub> CH<sub>2</sub> CH<sub>2</sub> CH<sub>2</sub> CH<sub>3</sub>
- $CH_2$   $CH_2$ b) CH<sub>2</sub> CH<sub>2</sub> CH<sub>2</sub> d) All of the above

d)  $Fe_2O_3$ 

**SECTION-II** 

### NOTE:

### 1. Answer all the questions 5. Each question carries 1 Mark

- 13. How would you convert degree calsius to Kelvin
- 14. If pH=7 then find the (H+]
- 15. Is the substance present in antacid tablet acidic (or) basic
- which lens can form Real and virtual image 16.
- What is the maximum focal length of the human eye 17.
- 18. What is the shape of d-orbital
- 19. Define Newland's law of octaves
- Name the material which is used to make the heating elements of irons, toasters. 20.

### **SECTION-III**

### NOTE: 1. Answer all the questions 2. Each question carries 2 Marks

- 21. How can you say that temperature is the measure of thermal equilibrium.
- 22. Why does not distilled water conduct electricity.
- 23. Define power of lens and write their unit.
- Write the four quantum numbers for 1s<sup>1</sup> election. 24.
- 25. What are the limitations of ohm's law.
- 26. List the properties of magnetic lines of force.
- 27. Define the terms (1) gangue (ii) Ore

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# 8x2=16M

8x1=8M

### 28. What are the general formulae alkenes and alkynes.

### SECTION-IV

### *NOTE*: **1**. Answer all the questions 2. Each question carries 4 Marks

### 5x4=20M

29. a. Explain the principle of method of mixtures with an activity

(or)

- b. What are the steps involved in sign convention.
- 30. a. State and explain with one example of Aubaf principle (or)
  - b. Explain how the elements are classified into s,p,d and f-block elements in the periodic table
- 31. How do you verify experimentally that sin i/ Sin r is a constant?

### (Or)

- b. How can you verify that the resistance of a conductor is temperature dependant.
- 32. a) Complete the following table based on quantum numbers related to atomic orbitals and electron of an atom.

Quantum number	Denoted by	Related to	Range of values
Principle quantum		Size and energy of	
number		the orbital	
	1		O to n-1
Magnetic quantum			<i>-l</i> o + d
number			
	Ms	Spin of electron	

b

			(OR)	
)	S.No.	Mineral/Ore	Formula	Metal available
	1.	Hornsilver	Agcl	Ag.
	2.	Bauxite	$Al_2O_3 2H_2O$	Al
	3.	Rock Salt	NaCl	Na
	4.	Lime stone	CaCO <sub>3</sub>	Са

Answer the following questions from information given in the above table.

- (i) Write names of metals which occur from state in nature
- (ii) Which is the most abundant metal available in the Earth's crust
- (iii) Why some elements like K, Na are not available in free state.
- Name one mineral / ore which is hydrous. (iv)

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- 33. a) Draw ray diagrams of image formed by convex lens when object is placed at
  - i) Object at infinity
  - ii) Object placed at centre of curvature (2F)
  - iii) Object placed between the centre of curvature (2F) and Focal point
  - iv) Object placed between focal point and optic centre.

### (OR)

b) Draw a neat diagram showing acid solutions in water conduct electricity.