# MODEL PAPER-4 <br> S.S.C. PUBLIC EXAMINATIONS-2021 <br> PHYSICAL SCIENCE <br> (English Medium) <br> (Max.Marks: 50) <br> Time: 2 Hr. 45 Min 

Class: X

## Instructions:

1. There are four sections an 33 questions in this papers.
2. Answer should be written in a given answer booklet
3. There is internal choice in Section-IV
4. Write all the questions visible and legibly.
5. $\mathbf{1 5}$ 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 $1 / 2$ mark
$12 \times 1 / 2=6 \mathrm{M}$

1. The CGS unit of heat is
2. Complete the following equation
$\mathrm{NaHCO}_{3}+\mathrm{Hcl} \longrightarrow \mathrm{NaCl}+\ldots \ldots \ldots \ldots \ldots . .+\mathrm{CO}_{2}$
3. Match the following

Material Medium
Refractive index

| 1. | Kerosene | $[$ | $]$ | a. |
| :--- | :--- | :--- | :--- | :--- |
| 2. | Crown glass | $[$ | 1.52 |  |
|  |  | b. | 1.71 |  |

4. Identify the following lens

a) Bi convex
b) Plano convex
c) Bi concave d) Concavo-convex
5. The angle between the incident ray and normal is called $\qquad$
6. The value of plank's constant $(\mathrm{h})$ is
a) $6.626 \times 10^{-27} \mathrm{erg}$.sec
b) $6.626 \times 10^{-34} \mathrm{JS}$
c) $6.626 \times 10^{-8} \mathrm{JS}$
d) $a \& b$
7. ...................... was the basis of the classifications proposed by Dobberiner, Newlands and Mendeleeff.
8. Match the following

Molecule
Bond Angle

1. $\mathrm{Be} \mathrm{Cl}_{2}$
2. $\quad \mathrm{BF}_{3}$
]
a) $120^{\circ}$
b) $109^{\circ} 28^{\prime}$
c) $180^{\circ}$
3. $\mathrm{A}: \mathrm{V}-\mathrm{I}$ graph for Si is non linear

R : Semi conductors are non ohmic.
a) Both $\mathrm{A}, \mathrm{R}$ are True, R is not correct explanation
b) Both $\mathrm{A}, \mathrm{R}$ are true, R is correct explanation of A
c) $A$ is True, $R$ is false
d) A is false, $R$ is true
10. The S.I. unit of magnetic flux is $\qquad$
11. Formula of cinnabar
a) pbs
b) Hgs
c) Cas
d) $\mathrm{Fe}_{2} \mathrm{O}_{3}$
12. Structure of Cyclo pentane
a)

b)

$\mathrm{CH}_{2}$
b)

d) All of the above

## SECTION-II

NOTE:

## 1. Answer all the questions

5. Each question carries 1 Mark
6. How would you convert degree calsius to Kelvin
7. If $\mathrm{pH}=7$ then find the $(\mathrm{H}+$ ]
8. Is the substance present in antacid tablet acidic (or) basic
9. which lens can form Real and virtual image
10. What is the maximum focal length of the human eye
11. What is the shape of d-orbital
12. Define Newland's law of octaves
13. Name the material which is used to make the heating elements of irons, toasters.

## SECTION-III

NOTE: 1. Answer all the questions

## $8 \times 2=16 \mathrm{M}$

## 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.
24. Write the four quantum numbers for $1 s^{1}$ election.
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
28. What are the general formulae alkenes and alkynes.

## SECTION-IV

## NOTE: 1. Answer all the questions

## 2. Each question carries 4 Marks

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 $\sin \mathrm{i} / \operatorname{Sin} \mathrm{r}$ 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 <br> number | $l$ | Size and energy of <br> the orbital |  |
|  |  |  | O to n-1 |
| Magnetic quantum <br> number | Ms | Spin of electron | $-l \mathrm{o}+\mathrm{d}$ |
|  |  |  |  |

b)

| S.No. | Mineral/Ore | Formula | Metal available |
| :--- | :--- | :--- | :---: |
| 1. | Hornsilver | Agcl | Ag. |
| 2. | Bauxite | $\mathrm{Al}_{2} \mathrm{O}_{3} 2 \mathrm{H}_{2} \mathrm{O}$ | Al |
| 3. | Rock Salt | NaCl | Na |
| 4. | Lime stone | $\mathrm{CaCO}_{3}$ | Ca |

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 $\mathrm{K}, \mathrm{Na}$ are not available in free state.
(iv) Name one mineral / ore which is hydrous.
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.

