T

SECOND MID TERM TEST - 2024

Standard - XII

PHYSICS

Reg.No. | | | 2 | 4 | 1 | 9 |

Time: 1.30 hrs. *Marks:35*

I. Answer all the questions: **5×1=5**

1. In a hydrogen atom, the electron revolving in the fourth orbit, has angular momentum equal to
   a) h b) h/π c) $4h/\pi$ d) $2h/\pi$
2. The ratio between the first three orbits of hydrogen atom is
   a) 1 : 2 : 3 b) 2 : 4 : 6 c) 1 : 4 : 9 d) 1 : 3 : 5
3. If the nuclear radius of ^{27}Al is 3.6 fermi, the approximate nuclear radius of ^{64}Cu in fermi is
   a) 2.4 b) 1.2 c) 4.8 d) 3.6
4. The Zener diode is primarily used as
   a) Rectifier b) Amplifier c) Oscillator d) Voltage regulator
5. If the input to the NOT gate is A = 1011, its output is
   a) 0100 b) 1000 c) 1100 d) 0011

II. Answer any four questions. Q.No.9 is compulsory: **4×2=8**

6. What is distance of clorest approach?
7. What is isotope? Give an example.
8. Calculate the radius of $_{79}Au^{179}$ nucleus.
9. Define impact parameter.
10. What do you mean by doping?
11. What do you mean by skip distance?
12. Give the Barkhausen conditions for sustained oscillations.

III. Answer any four questions. Q.No.16 is compulsory: **4×3=12**

13. Write any three properties of Cathode rays?
14. What is meant by radioactivitiy?
15. Write down the draw backs of Bohr atom model.
16. In a transistor connected in the common base configuration $\alpha = 0.95$, $I_E = 1mA$. Calculate the values of I_C and I_B.
17. What is meant by biasing? Mention its types.
18. Give application of RADAR.
19. What is rectification?

IV. Answer any two questions: **2×5=10**

20. Explain the J.J. Thomson experiment to determine the specific charge of electron.

(OR)

Obtain the law of radioactivity.

21. Draw the circuit diagram of a half wave rectifier and explain its working.

(OR)

State and prove DeMorgan's first and second theroem.

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21. Einstein photo electric eqn
Davidson German.
experiment