B.Sc. DEGREE EXAMINATION,APRIL 2019
I Year II Semester
Allied Physics- II

Time : 3 Hours   **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define dispersive power.
2. Give the relation between phase and path difference.
3. State Pauli Exclusion Principle.
4. Define coupling.
5. Define binding energy.
6. State exponential law.
7. Explain Joule-Thomson effect.
8. Define temperature of inversion.
9. Draw the symbol and truth table of OR gate.
10. Prove that AC+ABC = AC.
11. Define radioactivity.
12. Give two practical applications of low temperature.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Describe how two prisms can be combined to produce dispersion without deviation.
14. Explain the concept of Vector atom model.
15. Describe liquid drop model of nucleus.
16. Describe Lindes process of liquefying of air.
17. State and prove De-Morgans theorems.
18. Explain j-j coupling.
19. Bring out the differences between α and β rays.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain air wedge method and derive an expression for fringe width.

21. Explain the various quantum numbers based on vector atom model.

22. Derive the expression for half-life and mean life period.

23. Explain the porous plug experiment and discuss its results.

24. Explain how NOR gate can be used as OR, NOT & AND gates. Why is NOR gate called as universal block.

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