B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
II Year IV Semester
Allied Physics - II

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

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

Answer any **TEN** questions

1. Define dispersion.
2. Give the condition for maxima and minima intensity in interference.
3. What are quantised vectors?
4. State Pauli's exclusion principle.
5. Define radioactivity.
6. Define mass defect.
7. What is Joule-Kelvin effect?
8. Define temperature of inversion.
9. Draw the symbol and truth table of OR gate.
10. Prove A+AB = A
11. Define coupling.
12. State exponential law.

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

Answer any **FIVE** questions

13. Explain how an air wedge can be used to find diameter of a thin wire.
14. Explain L-S coupling scheme?
15. Derive expression for half life period.
16. Explain the theory of porous plug experiment?
17. Explain how NAND can be used as OR and NOT gate?
18. Describe liquid drop model of nucleus.
19. Explain the concept of spatial quantisation.

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

Answer any **THREE** questions

20. Show how two narrow angled prisms can be combined to produce
    a)dispersion without deviation and
    b)deviation without dispersion.
21. Explain the various quantum numbers associated with vector atom model?
22. Bring out the properties of alpha, beta and gamma rays.
23. Write a note on the industrial and scientific applications of low temperatures.
24. State and verify De Morgan's theorems.

B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
II Year IV Semester
Allied Physics - II

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

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

Answer any **TEN** questions

1. Define dispersion.
2. Give the condition for maxima and minima intensity in interference.
3. What are quantised vectors?
4. State Pauli's exclusion principle.
5. Define radioactivity.
6. Define mass defect.
7. What is Joule-Kelvin effect?
8. Define temperature of inversion.
9. Draw the symbol and truth table of OR gate.
10. Prove A+AB = A
11. Define coupling.
12. State exponential law.

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

Answer any **FIVE** questions

13. Explain how an air wedge can be used to find diameter of a thin wire.
14. Explain L-S coupling scheme?
15. Derive expression for half life period.
16. Explain the theory of porous plug experiment?
17. Explain how NAND can be used as OR and NOT gate?
18. Describe liquid drop model of nucleus.
19. Explain the concept of spatial quantisation.

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

Answer any **THREE** questions

20. Show how two narrow angled prisms can be combined to produce
    a)dispersion without deviation and
    b)deviation without dispersion.
21. Explain the various quantum numbers associated with vector atom model?
22. Bring out the properties of alpha, beta and gamma rays.
23. Write a note on the industrial and scientific applications of low temperatures.
24. State and verify De Morgan's theorems.