B.Sc. DEGREE EXAMINATION,APRIL 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 Dispersive power of a prism.
2. What do you mean by Interference?
3. What do you mean by spatial quantization.
4. What is excitation potential?
5. What do you understand by binding energy of a nucleus?
6. Define half life period of a radioactive substance.
7. What is the principle of regenerative cooling?
8. What is Joule-Thompson effect?
9. Draw the circuit symbol and give the truth-table of NAND gate.
10. What are the operations used in Boolean algebra.
11. Mention the coupling schemes in vector atom model,
12. What is OR gate?

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

Answer any **FIVE** questions

13. Describe how two narrow angled prisms can be combined to produce deviations without dispersion. Derive an expression for the resultant deviation produced.
14. Explain the different quantum numbers associated with the vector model of the atom.
15. Explain half life of a radioactive substance and derive an expression for it.
16. Describe the porous plug experiment.
17. State and prove Demorgan's theorems. Give necessary truth tables.
18. Give the properties of gamma rays.
19. Give the theory of Joule-Kelvin effect.

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

Answer any **THREE** questions

20. Describe with necessary theory the air wedge method of determining the thickness of a wire.

21. Describe Franck and Hertz experiment of measuring critical potential. What are its limitations?

22. Describe the liquid drop model of the nucleus.

23. Give the Linde's process of liquefying of air.

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

B.Sc. DEGREE EXAMINATION,APRIL 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 Dispersive power of a prism.
2. What do you mean by Interference?
3. What do you mean by spatial quantization.
4. What is excitation potential?
5. What do you understand by binding energy of a nucleus?
6. Define half life period of a radioactive substance.
7. What is the principle of regenerative cooling?
8. What is Joule-Thompson effect?
9. Draw the circuit symbol and give the truth-table of NAND gate.
10. What are the operations used in Boolean algebra.
11. Mention the coupling schemes in vector atom model,
12. What is OR gate?

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

Answer any **FIVE** questions

13. Describe how two narrow angled prisms can be combined to produce deviations without dispersion. Derive an expression for the resultant deviation produced.
14. Explain the different quantum numbers associated with the vector model of the atom.
15. Explain half life of a radioactive substance and derive an expression for it.
16. Describe the porous plug experiment.
17. State and prove Demorgan's theorems. Give necessary truth tables.
18. Give the properties of gamma rays.
19. Give the theory of Joule-Kelvin effect.

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

Answer any **THREE** questions

20. Describe with necessary theory the air wedge method of determining the thickness of a wire.

21. Describe Franck and Hertz experiment of measuring critical potential. What are its limitations?

22. Describe the liquid drop model of the nucleus.

23. Give the Linde's process of liquefying of air.

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