SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - II
20UMAAT2D02 - Allied Physics - II

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. Describe the concept of dispersion without deviation enumerating how two prisms are combined to achieve the phenomenon.

2. State Pauli's exclusion principle and mention its applications.

3. Describe the vector atom model and find out the total angular momentum.

4. List down the properties of gamma rays.

5. Arrive at the expression for half life period of a radioactive element.

6. What is Joule Thomson effect? List down the practical applications of low temperature science.

7. Draw the symbol and write the Boolean expressions and truth table for the basic logic gates.

8. Establish NAND gate as a universal logic gate.

Section B

Answer any **THREE** questions $(3 \times 10 = 30$ Marks$)$

9. Explain how you will determine the diameter of a wire using interference methods.

10. Discuss in detail the LS and jj coupling of electrons.

11. Arrive at the semi empirical mass formula for an atomic nucleus.

12. With neat diagram, explain the Joule Thomson porous plug experiment in detail. Also mention its applications.

13. State and prove De Morgan's theorems.

*****

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - II
20UMAAT2D02 - Allied Physics - II

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section A

Answer any SIX questions $(6 \times 5 = 30$ Marks)

1. Describe the concept of dispersion without deviation enumerating how two prisms are combined to achieve the phenomenon.

2. State Pauli's exclusion principle and mention its applications.

3. Describe the vector atom model and find out the total angular momentum.

4. List down the properties of gamma rays.

5. Arrive at the expression for half life period of a radioactive element.

6. What is Joule Thomson effect? List down the practical applications of low temperature science.

7. Draw the symbol and write the Boolean expressions and truth table for the basic logic gates.

8. Establish NAND gate as a universal logic gate.

Section B

Answer any THREE questions $(3 \times 10 = 30$ Marks)

9. Explain how you will determine the diameter of a wire using interference methods.

10. Discuss in detail the LS and jj coupling of electrons.

11. Arrive at the semi empirical mass formula for an atomic nucleus.

12. With neat diagram, explain the Joule Thomson porous plug experiment in detail. Also mention its applications.

13. State and prove De Morgan's theorems.

*****