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.
M.Sc.Physics - END SEMESTER EXAMINATIONS - NOV' 2024
SEMESTER - II

20PPHET2001 - Spectroscopy

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

Section B

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

1. Give the Salient features of Rotational spectra.
2. Discuss about Anharmonicity and Fermi Resonance.
3. Differentiate between IR and Raman spectroscopy.
4. Explain the design of CW NMR spectrometer.
5. Elaborate the quantum theory of ESR.
6. Discuss about the principle and working of Microwave spectrometer.
7. Discuss about the applications of Raman spectroscopy.
8. Write notes on Chemical shift.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Explain in detail about the rotational spectra of polyatomic molecules.
10. Discuss in detail the functions of FTIR spectrometer.
11. Illustrate the quantum theory of Raman effect.
12. Discuss about types of interactions and zero field splitting.

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. With a neat block diagram explain NMR and its steady state solution.

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