

COURSE OBJECTIVES AND COURSE OUTCOMES

T. Y. B. Sc. SEMESTER - V

PHYSICS PAPER - III

SUBJECT: ATOMIC AND MOLECULAR SPECTRA (USPH503)

Sr. No.	Course Objectives	Course Outcomes
1)	To understand the spectra of a simple atom	Study atomic spectra of hydrogen atom by solving Schrodinger equation in spherical polar coordinates. Understand the different quantization, their meaning and importance in spectroscopy
2)	The importance of spectra in as a tool to analyze interaction present in an atom	The stern-Gerlach experiment, the importance of intrinsic spin in predicting the spectral lines of complex spectra .The various coupling schemes, writing spectroscopic notation and the selection rules
3)	Examine Different aspects of molecular spectra	Learn the different types of spectra in molecules, their energy levels and the corresponding selection rules
4)	Understand Raman spectra	The fundamental theory behind Raman spectra, various types of Raman spectra, their selection rule
5)	Use of Spectroscopy and their application	The principle of NMR, ESR etc. and their applications

COURSE OBJECTIVES AND COURSE OUTCOMES

T. Y. B. Sc. SEMESTER - VI

PHYSICS PAPER - III

SUBJECT: NUCLEAR PHYSICS (USPH603)

Sr. No.	Course Objectives	Course Outcomes
1)	To explore the basics in nuclear properties and study alpha, beta and gamma decay	Ability to understand fundamental concepts in nuclear physics and physics involved in alpha beta and gamma decay
2)	To develop concepts of liquid drop model and shell model	Capability of appreciating the importance of models and their role in relation with physical phenomena
3)	To study nuclear fission and neutron cycle in thermal nuclear reactor	Develop concepts in fission, neutron cycle and also explore ideas in fields of particle accelerators
4)	To introduce ideas in nuclear physics in applications of particle accelerators, introduce the idea of Large Hadron Collider	Appreciate the importance of developments in fields of particle accelerators and their role in understanding the theoretical ideas
5)	To introduce ideas of nuclear force and deuteron problem. Discuss the meson theory	Understand the deuteron problem and meson theory of nuclear force
6)	To introduce elementary particle and explore the ideas in classification of elementary particles	Basic introduction to the field of particle physics by understanding classification of elementary particles and quark model in brief
7)	To solve problems of simple and semi-complex nature	Ability to solve problems involving the theoretical concepts of simple and intricate levels