ASSIGNMENT QUESTIONS
M.SC. PHYSICS
SEMESTER III

NAME OF THE COURSE : QUANTUM MECHANICS-II (SPHM31)

1. a) Discuss an brief note on Born approximation and its validity.
   (OR)
   b) Explain the theory behind Time dependent perturbation Theory.

2. a) Device Klein –Gordon Equation
   (OR)
   b) Explain Feynman's Theory of positron.

NAME OF THE COURSE : CONDENSED MATTER PHYSICS (SPHM32)

1. a) Explain the Receprocal lattice of SC, BCC and FCC.
   (OR)
   b) Explain Debye's Theory of lattice heat capacity.

2. a) State and prove Bloch Theorem.
   (OR)
   b) Explain the Heisenberg's interpretation of weiss field

NAME OF THE COURSE : NUMERICAL METHODS AND PROGRAMMING IN C++ (SPHM33)

1. a) Explain convergance of solutions in Bisection and Newton –Raphson methods
   (OR)
   b) How do you determine the eigen value and eigen vectors of matrices.

2. a) Device Newtons forward and backward interpretation
   (OR)
   b) Explain Euler and Runga Kutta methods in detail.

SPHE31

NAME OF THE COURSE : SPECTROSCOPY

1. a) Explain the rotation spectra of diatomic molecules using Rigid rotor.
   b) Brief about vibrations of simple harmonic oscillator

2. a) Explain the theory of Raman Scattering.
   b) Explain the basic principle of Electron spin Resonance.

SPHS31

NAME OF THE COURSE : MICROPROCESSOR 8085 & MICROCONTROLLER 8051

1. a) Discuss an brief note on Instruction Set Adressing modes and programming techniques in 8085..
   b) Explain the interfacing of digital to analog and analog to digital converter of 8085

2. a) Explain about the 8051 microcontroller hardware.
   b) Explain Data moving (Transfer) instructions in 8051.