Saraswati Mahila Mahavidyalaya, Palwal

**Lesson Plan :**

**Name of the Assistant/Associate Professor: Nisha Dagar**

**Class and Section: M.sc(physics) previous and Final(Theory and Lab)**

**B.Sc – II (Lab) Non-Medical.**

**Name of subject:Quantum Mechanics-II and physics of nano materials**

**Subject Lesson Plan : 18 weeks(from January 2018 to April 2018)**

**(Note: Prepare as per list of holidays declared by Haryana govt.)**

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| **WEEK 1** |
| **ASSIGNMENT:** |
| **WEEK 1,DAY1 ,DATE :01/01/2018(MONDAY)** |
| **M.sc-Final-TH : Types of matter,metals,insulators and semiconductors**  **B.Sc-LAB : Demonstration and implementation of experiment**  **To draw a graph between wavelength and minimum deviation for various line using mercury discharge source.** |
| **WEEK 1 ,DAY 2 ,DATE :02/01/2018(TUESDAY)** |
| **M.sc-Final-TH :Free electron theory and its qualitative idea**  **B.Sc-LAB :implementation ,Calculation and graph plot** |
| **WEEK 1,DAY 3 ,DATE :03/01/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Features of free electron theory** |
| **WEEK 1 ,DAY 4 ,DATE :04/01/2018(THURSDAY)** |
| **M.sc-previous-TH : types of approximation method and variational method and numerical.**  **M.sc-previous-LAB : Demonstration and implementation of experiment of B-H Curve for a given sample using CRO.** |
| **WEEK 1,DAY 5 ,DATE :05/01/2018(FRIDAY)** |
| **Holiday on account of Guru Govind Singh’s Birthday** |
| **WEEK 1 ,DAY 6 ,DATE :06/01/2018(SATURDAY)** |
| **M.sc-previous-TH :Time independent perturbation theory and numericals**  **M.sc-previous-LAB : Implementation ,Calculation and graph plot** |
| **WEEK 2** |
| **ASSIGNMENT:** |
| **WEEK 2,DAY1 ,DATE :08/01/2018(MONDAY)** |
| **M.sc-Final-TH : Density of states**  **B.Sc-LAB : Implementation ,Calculation and graph plot** |
| **WEEK 2 ,DAY 2 ,DATE :09/01/2018(TUESDAY)** |
| **M.sc-Final-TH : Density of states in valence band and conduction band**  **B.Sc-LAB : File checking and Viva** |
| **WEEK 2,DAY 3 ,DATE :10/01/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Formation of band structure** |
| **WEEK 2 ,DAY 4 ,DATE :11/01/2018(THURSDAY)** |
| **M.sc-previous-TH : WKB approximation derivation.**  **M.sc-previous-LAB : File checking and Viva** |
| **WEEK 2,DAY 5 ,DATE :12/01/2018(FRIDAY)** |
| **M.sc-previous-TH :Time dependent perturbation theory**  **M.sc-previous-LAB : Demonstration and implementation of experiment Heat Capacity kit to determine the heat capacity of solids.** |
| **WEEK 2 ,DAY 6 ,DATE :13/01/2018(SATURDAY)** |
| **M.sc-previous-TH :Constant and harmonic perturbation**  **M.sc-previous-LAB : implementation ,Calculation and graph plot** |
| **WEEK 3** |
| **ASSIGNMENT:** |
| **WEEK 3,DAY1 ,DATE :15/01/2018(MONDAY)** |
| **M.sc-Final-TH : Variation of density of states with energy.**  **B.Sc-LAB : Demonstration and implementation to determine no. of lines per cm using diffraction grating.** |
| **WEEK 3 ,DAY 2 ,DATE :16/01/2018(TUESDAY)** |
| **M.sc-Final-TH : Effect of crystal size on variation density and band gap**  **B.Sc-LAB : : implementation ,Calculation and graph plot** |
| **WEEK 3,DAY 3 ,DATE :17/01/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Group disscussion on crystal formation and crstal size determination** |
| **WEEK 3 ,DAY 4 ,DATE :18/01/2018(THURSDAY)** |
| **M.sc-previous-TH : Fermi golden rule ,sudden and adiabatic approximation.**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking** |
| **WEEK 3,DAY 5 ,DATE :19/01/2018(FRIDAY)** |
| **M.sc-previous-TH :Numerical on WKB approximation**  **M.sc-previous-LAB : : implementation and demonstration of Fourier analysis of different harmonic and measure of amplitudes.** |
| **WEEK 3 ,DAY 6 ,DATE :20/01/2018(SATURDAY)**  **M.sc-previous-TH : time dependent perturbation theory numericals**  **M.sc-previous-LAB : implementation ,Calculation and graph plot** |
| **WEEK 4** |
| **ASSIGNMENT:** |
| **WEEK 3,DAY1 ,DATE :22/01/2018(MONDAY)** |
| **Holiday on account of Basant Panchmi.** |
| **WEEK 4 ,DAY 2 ,DATE :23/01/2018(TUESDAY)** |
| **M.sc-Final-TH : Revision and seminar of UNIT -1**  **B.Sc-LAB : implementation ,Calculation and graph plot** |
| **WEEK 4,DAY 3 ,DATE :24/01/2018(WEDNESDAY)** |
| **Holiday on account of Sir Chotu Ram Jayanti.** |
| **WEEK 4 ,DAY 4 ,DATE :25/01/2018(THURSDAY)** |
| **M.sc-previous-TH : Hydrogen molecule and He atom energy calculation by Vriational method and perturbation method**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 4,DAY 5 ,DATE :26/01/2018(FRIDAY)** |
| **Holiday on account of Republic Day.** |
| **WEEK 4 ,DAY 6 ,DATE :27/01/2018(SATURDAY)** |
| **M.sc-previous-TH : Revision of UNIT-1**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 5** |
| **ASSIGNMENT:** |
| **WEEK 5,DAY1 ,DATE :29/01/2018(MONDAY)** |
| **M.sc-Final-TH : Revision and seminar of UNIT -1**  **B.Sc-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 5 ,DAY 2 ,DATE :30/01/2018(TUESDAY)** |
| **M.sc-Final-TH : Test of UNIT-1**  **B.Sc-LAB : implementation and demonstration of Newton’s ring** |
| **WEEK 5,DAY 3 ,DATE :31/01/2018(WEDNESDAY)** |
| **Holiday on account of Guru Ravi Dass Jayanti** |
| **WEEK 5 ,DAY 4 ,DATE :01/02/2018(THURSDAY)** |
| **M.sc-previous-TH : Test of UNIT-1**  **M.sc-previous-LAB : implementation and demonstration of Stefan’s constant by black body copper radiation plates.** |
| **WEEK 5,DAY 5 ,DATE :02/02/2018(FRIDAY)** |
| **M.sc-previous-TH : Transition probability for absorption**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 5 ,DAY 6 ,DATE :03/02/2018(SATURDAY)**  **M.sc-previous-TH : Transition probability for induced emmision**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 6** |
| **ASSIGNMENT:** |
| **WEEK 6,DAY1 ,DATE :05/02/2018(MONDAY)** |
| **M.sc-Final-TH : Discussion on nano science and nano materials**  **B.Sc-LAB : implementation ,Calculationand file checking with viva** |
| **WEEK 6 ,DAY 2 ,DATE :06/02/2018(TUESDAY)** |
| **M.sc-Final-TH :Preparation methods of nano materials.**  **B.Sc-LAB : implementation ,Calculationand file checking with viva** |
| **WEEK 6,DAY 3 ,DATE :07/02/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Beam depositon** |
| **WEEK 6 ,DAY 4 ,DATE :08/02/2018(THURSDAY)** |
| **M.sc-previous-TH :Electric dipole and transition**  **M.sc-previous-LAB : implementation and demostration of JFET characterstic and SCR characterstics.** |
| **WEEK 6,DAY 5 ,DATE :09/02/2018(FRIDAY)** |
| **M.sc-previous-TH : Selection rule**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 6 ,DAY 6 ,DATE :10/02/2018(SATURDAY)** |
| **Holiday on account of Maharshi Dayanand Saraswati Jayanti.** |
| **WEEK 7** |
| **ASSIGNMENT:** |
| **WEEK 7,DAY1 ,DATE :12/02/2018(MONDAY)** |
| **M.sc-Final-TH : Cluster beam evaporation**  **B.Sc-LAB :implementation ,Calculation and file checking with viva** |
| **WEEK 7 ,DAY 2 ,DATE :13/02/2018(TUESDAY)** |
| **Holiday on account of Maha Shivaratri.** |
| **WEEK 7,DAY 3 ,DATE :14/02/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Ion beam deposition** |
| **WEEK 7 ,DAY 4 ,DATE :15/02/2018(THURSDAY)** |
| **M.sc-previous-TH :Magnetic dipole and transition**  **M.sc-previous-LAB : implementation ,Calculation and file checking with viva** |
| **WEEK 7,DAY 5 ,DATE :16/02/2018(FRIDAY)** |
| **M.sc-previous-TH : Forbidden transition**  **M.sc-previous-LAB : Demostraion of RC coupled amplifier** |
| **WEEK 7 ,DAY 6 ,DATE :17/01/2018(SATURDAY)** |
| **M.sc-previous-TH :Higher order transition**  **M.sc-previous-LAB : implementation ,Calculation and graph plot and file checking with viva** |
| **WEEK 8** |
| **ASSIGNMENT:** |
| **WEEK 8,DAY1 ,DATE :19/02/2018(MONDAY)** |
| **M.sc-Final-TH :CBD deposition and Sol-GEL TEQUNIQUE**  **B.Sc-LAB : implementation and demostration of RC coupled amplifer.** |
| **WEEK 8 ,DAY 2 ,DATE :20/02/2018(TUESDAY)** |
| **M.sc-Final-TH : Capping of materials and its technique.**  **B.Sc-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 8,DAY 3 ,DATE :21/02/2018(WEDNESDAY)** |
| **M.sc-final-TH :Ball milling and Seminar** |
| **WEEK 8 ,DAY 4 ,DATE :22/02/2018(THURSDAY)** |
| **M.sc-previous-TH :Sopntaneous and stimulated emission and absorbition**  **M.sc-previous-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 8,DAY 5 ,DATE :23/02/2018(FRIDAY)** |
| **M.sc-previous-TH :Einstien’s Coefficient**  **M.sc-previous-LAB : implementation and demostration of four probe.** |
| **WEEK 8 ,DAY 6 ,DATE :24/02/2018(SATURDAY)** |
| **M.sc-previous-TH : Seminar of unit-2**  **M.sc-previous-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 9** |
| **ASSIGNMENT:** |
| **WEEK 9,DAY1 ,DATE :26/02/2018(MONDAY)** |
| **M.sc-Final-TH :Use of nano materirials and their prepration technique**  **B.Sc-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 9 ,DAY 2 ,DATE :27/02/2018(TUESDAY)** |
| **M.sc-Final-TH :Revision of unit-4**  **B.Sc-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 9,DAY 3 ,DATE :28/02/2018(WEDNESDAY)** |
| **VACATION -II** |
| **WEEK 9 ,DAY 4 ,DATE :01/03/2018(THURSDAY)** |
| **VACATION -II** |
| **WEEK 9,DAY 5 ,DATE :02/03/2018(FRIDAY)** |
| **VACATION -II** |
| **WEEK 9 ,DAY 6 ,DATE :03/03/2018(SATURDAY)** |
| **VACATION -II** |
| **WEEK 10** |
| **ASSIGNMENT:** |
| **WEEK 10,DAY1 ,DATE :05/03/2018(MONDAY)** |
| **M.sc-Final-TH : Test of unit-4**  **B.Sc-LAB : implementation and demonstration of series and parallel resonance circuit** |
| **WEEK 10,DAY 2 ,DATE :06/03/2018(TUESDAY)** |
| **M.sc-Final-TH : Charectrization Techniques**  **B.Sc-LAB :implementation ,Calculation and file checking with viva** |
| **WEEK 10,DAY 3 ,DATE :07/03/2018(WEDNESDAY)** |
| **M.sc-Final-TH : XRD Technique** |
| **WEEK 10,DAY 4 ,DATE :08/03/2018(THURSDAY)** |
| **M.sc-previous-TH : Test of unit -2**  **M.sc-previous-LAB : implementation ,Calculatio and file checking with viva** |
| **WEEK 10,DAY 5 ,DATE :09/03/2018(FRIDAY)** |
| **M.sc-previous-TH : LAB and CM frame of refrence**  **M.sc-previous-LAB : implementation and demonstration of Plancks’s constant** |
| **WEEK 10 ,DAY 6 ,DATE :10/03/2018(SATURDAY)** |
| **M.sc-previous-TH : Scattering amplitude**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 11** |
| **ASSIGNMENT:** |
| **WEEK 11,DAY1 ,DATE :12/03/2018(MONDAY)** |
| **M.sc-Final-TH : Identification of peaks, FWHM calculation in XRD**  **B.Sc-LAB : Calculation and file checking with viva** |
| **WEEK 11,DAY 2 ,DATE :13/03/2018(TUESDAY)** |
| **M.sc-Final-TH : Particle size determination from XRD**  **B.Sc-LAB : Calculation and file checking with viva** |
| **WEEK 11,DAY 3 ,DATE :14/03/2018(WEDNESDAY)** |
| **M.sc-Final-TH :PL and FL spectrum study** |
| **WEEK 11,DAY 4 ,DATE :15/03/2018(THURSDAY)** |
| **M.sc-previous-TH : Scattering amplitude and differential scattering cross section**  **M.sc-previous-LAB : Calculation and file checking with viva** |
| **WEEK 11,DAY 5 ,DATE :16/03/2018(FRIDAY)** |
| **M.sc-previous-TH : Total scattring cross section and numericals**  **M.sc-previous-LAB : implementation and demonstration of Astable,monostable and bistable multivibrators.** |
| **WEEK 11 ,DAY 6 ,DATE :17/03/2018(SATURDAY)** |
| **M.sc-previous-TH : Optical theorem and phase shift**  **M.sc-previous-LAB : implementation ,Calculation and file checking with viva** |
| **WEEK 12** |
| **ASSIGNMENT:** |
| **WEEK 12,DAY1 ,DATE :19/03/2018(MONDAY)** |
| **M.sc-Final-TH : study of shift effect in PL spectra**  **B.Sc-LAB : demonstration of roots of quadratic equation.** |
| **WEEK 12,DAY 2 ,DATE :20/03/2018(TUESDAY)** |
| **M.sc-Final-TH : Raman spectra nanomaterials**  **B.Sc-LAB :Implementation of program** |
| **WEEK 12,DAY 3 ,DATE :21/03/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Variation of Raman spectra and use of raman charectrization.** |
| **WEEK 12,DAY 4 ,DATE :22/03/2018(THURSDAY)** |
| **M.sc-previous-TH : Scattering of spherically symmetric potential**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 12,DAY 5 ,DATE :23/03/2018(FRIDAY)** |
| **Holiday on account of Shahidi diwas.** |
| **WEEK 12 ,DAY 6 ,DATE :24/03/2018(SATURDAY)** |
| **M.sc-previous-TH : Partial waves and phase shift**  **M.sc-previous-LAB : implementation and demonstration of negative feedback amplifer** |
| **WEEK 13** |
| **ASSIGNMENT:** |
| **WEEK 13,DAY1 ,DATE :26/03/2018(MONDAY)** |
| **M.sc-Final-TH :Explanation of some more characterization technique like- SEM,TEM, UV-Vis.**  **B.Sc-LAB : implementation of program** |
| **WEEK 13,DAY 2 ,DATE :27/03/2018(TUESDAY)** |
| **M.sc-Final-TH :Revision of unit-3 and seminar**  **B.Sc-LAB : File checking with viva** |
| **WEEK 13,DAY 3 ,DATE :28/03/2018(WEDNESDAY)** |
| **M.sc-Final-TH :Test of unit-3** |
| **WEEK 13,DAY 4 ,DATE :29/03/2018(THURSDAY)** |
| **Holiday on account of Mahavir jayanti.** |
| **WEEK 13,DAY 5 ,DATE :30/03/2018(FRIDAY)** |
| **M.sc-previous-TH :Scattering by a perfectly rigid sphere and by square well potential.**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 13 ,DAY 6 ,DATE :31/03/2018(SATURDAY)** |
| **M.sc-previous-TH :Complex potential and absorption**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 14** |
| **ASSIGNMENT:** |
| **WEEK 14,DAY1 ,DATE :02/04/2018(MONDAY)** |
| **M.sc-Final-TH : Overview of square well ad potential well**  **B.Sc-LAB : Demonstration of program to find area of triangle, sphere and cylinder.** |
| **WEEK 14,DAY 2 ,DATE :03/04/2018(TUESDAY)** |
| **M.sc-Final-TH :Electron confinement in infinitely deep square well.**  **B.Sc-LAB : implementation of program** |
| **WEEK 14,DAY 3 ,DATE :04/04/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Confinement in 2D well.** |
| **WEEK 14,DAY 4 ,DATE :05/04/2018(THURSDAY)** |
| **M.sc-previous-TH :The Born William approximation**  **M.sc-previous-LAB : implementation and demonstration of Boltzman constant determination** |
| **WEEK 14,DAY 5 ,DATE :06/04/2018(FRIDAY)** |
| **M.sc-previous-TH : Numerical on BW approximation**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva.** |
| **WEEK 14 ,DAY 6 ,DATE :07/04/2018(SATURDAY)** |
| **M.sc-previous-TH :Revision of unit -3**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 15** |
| **ASSIGNMENT:** |
| **WEEK 15,DAY1 ,DATE :09/04/2018(MONDAY)** |
| **M.sc-Final-TH :Confinement in 1D well**  **B.Sc-LAB : implementation of program** |
| **WEEK 15,DAY 2 ,DATE :10/04/2018(TUESDAY)** |
| **M.sc-Final-TH :Idea of Quantum well structure**  **B.Sc-LAB :File checking with viva** |
| **WEEK 15,DAY 3 ,DATE :11/04/2018(WEDNESDAY)** |
| **M.sc-Final-TH :Quantum Dots** |
| **WEEK 15,DAY 4 ,DATE :12/04/2018(THURSDAY)** |
| **M.sc-previous-TH : Test of unit-3**  **M.sc-previous-LAB : implementation and demonstration of emitter follower** |
| **WEEK 15,DAY 5 ,DATE :13/04/2018(FRIDAY)** |
| **M.sc-previous-TH :Identical particle and symmetric and anti symmetric wave function**  **M.sc-previous-LAB :implementation , Calculation and file checking with viva** |
| **WEEK 15 ,DAY 6 ,DATE :14/04/2018(SATURDAY)** |
| **Holiday on account of Vaisakhi & Dr B.R. Ambedkar’s Jayanti.** |
| **WEEK 16** |
| **ASSIGNMENT:** |
| **WEEK 16,DAY1 ,DATE :16/04/2018(MONDAY)** |
| **M.sc-Final-TH : Seminar on Quantum dot**  **B.Sc-LAB :Demostraion and implementation of to find equivalent focal length of a lens system.** |
| **WEEK 16,DAY 2 ,DATE :17/04/2018(TUESDAY)** |
| **M.sc-Final-TH : Quantum Wire**  **B.Sc-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 16,DAY 3 ,DATE :18/04/2018(WEDNESDAY)** |
| **Holiday on account of Maharshi Pasuram Jayanti** |
| **WEEK 16,DAY 4 ,DATE :19/04/2018(THURSDAY)** |
| **M.sc-previous-TH : Revision of unit-2**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 16,DAY 5 ,DATE :20/04/2018(FRIDAY)** |
| **M.sc-previous-TH :Spin and statics of identical particles ,Slatter deteminantand collision of identical particles.**  **M.sc-previous-LAB : Demostraion and implementation of dissociation energy of Iodine.** |
| **WEEK 16 ,DAY 6 ,DATE :21/04/2018(SATURDAY)** |
| **M.sc-previous-TH :Pauli Exculsion principle,spin state of two electron system**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 17** |
| **ASSIGNMENT:** |
| **WEEK 17,DAY1 ,DATE :23/04/2018(MONDAY)** |
| **M.sc-Final-TH : Revision of unit-2 and seminar**  **B.Sc-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 17,DAY 2 ,DATE :24/04/2018(TUESDAY)** |
| **M.sc-Final-TH : Test of unit-2**  **B.Sc-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 17,DAY 3 ,DATE :25/04/2018(WEDNESDAY)** |
| **M.sc-Final-TH : Discussion of previous year question papers.** |
| **WEEK 17,DAY 4 ,DATE :26/04/2018(THURSDAY)** |
| **M.sc-previous-TH :Spin states of He atom and numericals**  **M.sc-previous-LAB : implementation , Calculation and file checking with viva** |
| **WEEK 17,DAY 5 ,DATE :27/04/2018(FRIDAY)** |
| **M.sc-previous-TH :REVISION**  **M.sc-previous-LAB :Revision and file checking with viva** |
| **WEEK 17 ,DAY 6 ,DATE :28/04/2018(SATURDAY)** |
| **M.sc-previous-TH : REVISION**  **M.sc-previous-LAB : Revision and file checking with viva** |
| **WEEK 18** |
| **ASSIGNMENT:** |
| **WEEK 18,DAY1 ,DATE :30/04/2018(MONDAY)** |
| **M.sc-Final-TH : REVISION**  **B.Sc-LAB : Revision and file checking with viva** |