

LESSON PLAN

PHYSICS

Name of the Assistant Professor: Sundeep Kumar

Class and Section: B.Sc 6th Sem (PHYSICS)

Subject Lesson Plan: 16 Weeks (from 21/03/2022 to 10/07/2022)

Total Working days: 92 days

| Week 1 |
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| Chapter: B.Sc 6th Sem : Spectroscopy of Atoms |
| Week 1 Day 1 Date : 21/03/2022 B.Sc 6th Sem: Historical introduction of early observation in atomic spectroscopy |
| Week 1 Day 2 Date : 22/03/2022 B.Sc 6th Sem: Bohr of Atom model |
| Week 1 Day 3 Date : 23/03/2022 Holiday : Shahidi Diwas |
| Week 1 Day 4 Date : 24/03/2022 B.Sc 6th Sem:Bohr summer field atom model |
| Week 1 Day 5 Date : 25/03/2022 B.Sc 6th Sem:magnetic moment of the atom |
| Week 1 Day 6 Date : 26/03/2022 B.Sc 6th Sem: Spectra of Alkali Metals and penetrating and non penetrating orbits |
| Week 2 |
| Chapter: B.Sc 6th Sem :Spectra of Alkali Metals , Vector model and doublet fine structure of alkali metals |
| Assignments: Spectra of Alkali Metals and penetrating and non penetrating orbits |
| Week 2 Day 1 Date : 28/03/2022 B.Sc 6th Sem: Spin quantum number, orbital quantum number, principle quantum number, spin angular momentum , orbital angular momentum , total angular momentum etc |
| Week 2 Day 2 Date : 29/03/2022 B.Sc 6th Sem:Vector atom model |
| Week 2 Day 3 Date : 30/03/2022 B.Sc 6th Sem: spin orbit interaction of electron and spin orbit non penetrating orbit |
| Week 2 Day 4 Date : 31/03/2022 B.Sc 6th Sem: short questions and numericals |
| Week 2 Day 5 Date : 01/04/2022 B.Sc 6th Sem: Spin orbit interaction for penetrating orbit |
| Week 3 Day 6 Date : 02/04/2022 B.Sc 6th Sem:ll coupling , ss coupling , LS coupling |
| Week 3 |
| Chapter: B.Sc 6th Sem Spectra of Alkali Metals , Vector model and doublet fine structure of alkali metals |
| Assignments: Vector atom model |
| Week 3 Day 1 Date : 04/04/2022 |

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| B.Sc 6th Sem: jj coupling Term value of ss coupling |
| Week 3 Day 2 Date : 05/04/2022 |
| B.Sc 6th Sem: Spin orbit interaction for two valence electron systems, |
| Week 3 Day 3 Date : 06/04/2022 |
| B.Sc 6th Sem:Term value of jj coupling , |
| Week 3 Day 4 Date : 07/04/2022 |
| B.Sc 6th Sem: term value for LS coupling |
| Week 3 Day 5 Date : 08/04/2022 |
| B.Sc 6th Sem: take the test |
| Week 3 Day 6 Date : 09/04/2022 |
| B.Sc 6th Sem:numericals of this units and take the problems |
| Week 4 |
| Chapter: B.Sc 6th Sem Zeemen effect, paschen back effect and stark effect for single valence electron system |
| Assignments: Term value of jj coupling , |
| Week 4 Day 1 Date : 11/04/2022 |
| B.Sc 6th Sem: Zeeman effect (normal and Anormalous) |
| Week 4 Day 2 Date : 12/04/2022 |
| B.Sc 6th Sem: Zeeman pattern of D1 lines of Na-atom |
| Week 4 Day 3 Date : 13/04/2022 |
| B.Sc 6th Sem: Zeeman pattern of D2 lines of Na-atom |
| Week 4 Day 4 Date : 14/04/2022 |
| Holiday : Ambedkar Jayanti |
| Week 4 Day 5 Date : 15/04/2022 |
| B.Sc 6th Sem: Paschen, Back effect of a single valence electron system |
| Week 4 Day 6 Date : 16/04/2022 |
| B.Sc 6th Sem: Weak field Strak effect of Hydrogen atom |
| Week 5 |
| Chapter: B.Sc 6th Sem :Molecular physics |
| Assignments: Paschen, Back effect of a single valence electron system |
| Week 5 Day 1 Date : 18/04/2022 |
| B.Sc 6th Sem: Electronics state of diatomic of molecules |
| Week 5 Day 2 Date : 19/04/2022 |
| B.Sc 6th Sem: Rotation spectra in the microwave region |
| Week 5 Day 3 Date : 20/04/2022 |
| B.Sc 6th Sem: Vibrating rotator model of the diatomic molecules |
| Week 5 Day 4 Date : 21/04/2022 |
| B.Sc 6th Sem: Raman effect |
| Week 5 Day 5 Date : 22/04/2022 |
| B.Sc 6th Sem: Classical and quantum theory and Raman effect |
| Week 5 Day 6 Date : 23/04/2022 |
| B.Sc 6th Sem: Raman spectra |
| Week 6 |

Chapter: B.Sc 6th Sem : Molecular physics, Laser

Assignments: Raman effect

Week 6 Day 1 Date : 25/04/2022

B.Sc 6th Sem: Vibrational structure and rotational structure

Week 6 Day 2 Date : 26/04/2022

B.Sc 6th Sem: Numerical and problems

Week 6 Day 3 Date : 27/04/2022

B.Sc 6th Sem: take the test

Week 6 Day 4 Date : 28/04/2022

B.Sc 6th Sem: Main feature of laser

Week 6 Day 5 Date : 29/04/2022

B.Sc 6th Sem: Define LASER, MASER, Optical Electronics

Week 6 Day 6 Date : 30/04/2022

B.Sc 6th Sem: Absorption and emission of radiation

Week 7**Chapter: B.Sc 6th Sem : LASER**

Assignments: Main feature of laser

Week 7 Day 1 Date : 02/05/2022

B.Sc 6th Sem: Monochromaticity, coherence

Week 7 Day 2 Date : 03/05/2022

Holiday : Parshuram Jayanti

Week 7 Day 3 Date : 04/05/2022

B.Sc 6th Sem: Einstein's coefficients

Week 7 Day 4 Date : 05/05/2022

B.Sc 6th Sem: life time, Momentum transfer

Week 7 Day 5 Date : 06/05/2022

B.Sc 6th Sem: Kinetics of optical absorption

Week 7 Day 6 Date : 07/05/2022

B.Sc 6th Sem: threshold condition

Week 8**Chapter: B.Sc 6th Sem : LASER**

Assignments: Einstein's coefficients

Week 8 Day 1 Date : 09/05/2022

B.Sc 6th Sem: laser pumping

Week 8 Day 2 Date : 10/05/2022

B.Sc 6th Sem: Numerical and short questions

Week 8 Day 3 Date : 11/05/2022

B.Sc 6th Sem: Take the test

Week 8 Day 4 Date : 12/05/2022

B.Sc 6th Sem: Principle of ruby laser

Week 8 Day 5 Date : 13/05/2022

B.Sc 6th Sem: Construction of ruby laser

Week 8 Day 6 Date : 14/05/2022

B.Sc 6th Sem: Revised ruby laser

Week 9

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| Chapter: B.Sc 6th Sem : LASER |
| Assignments: Ruby laser |
| Week 9 Day 1 Date : 16/05/2022 B.Sc 6th Sem:Principal of He-Ne laser |
| Week 9 Day 2 Date : 17/05/2022 B.Sc 6th Sem: Constraction working of laser |
| Week 9 Day 3 Date : 18/05/2022 B.Sc 6th Sem: Revised of He-Ne laser |
| Week 9 Day 4 Date : 19/05/2022 B.Sc 6th Sem: Main feature of semi conductor laser |
| Week 9 Day 5 Date : 20/05/2022 B.Sc 6th Sem: Condition of laser action |
| Week 9 Day 6 Date : 21/05/2022 B.Sc 6th Sem: Numericals and problems |
| Week 10 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
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| Week 10 Day 1 Date : 23/05/2022 B.Sc 6th Sem: Rutherford alpha scattering experiment |
| Week 10 Day 2 Date : 24/05/2022 B.Sc 6th Sem: closest approach of alpha particle |
| Week 10 Day 3 Date : 25/05/2022 B.Sc 6th Sem: Discovery of nucleus & its properties |
| Week 10 Day 4 Date : 26/05/2022 B.Sc 6th Sem: Nuclear size, spin |
| Week 10 Day 5 Date : 27/05/2022 B.Sc 6th Sem: parity, statistics |
| Week 10 Day 6 Date : 28/05/2022 B.Sc 6th Sem: magnetic dipole moment, quadrupole moment |
| Week 11 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: Nuleus & its properties |
| Week 11 Day 1 Date : 30/05/2022 B.Sc 6th Sem:Nuclear mass and binding energy |
| Week 11 Day 2 Date : 31/05/2022 B.Sc 6th Sem: BE curve |
| Week 11 Day 3 Date : 01/06/2022 B.Sc 6th Sem: systematics nuclear binding energy |
| Week 11 Day 4 Date : 02/06/2022 Holiday ; Maharana Pratap Jayanti |
| Week 11 Day 5 Date : 03/06/2022 B.Sc 6th Sem: nuclear stability |
| Week 11 Day 6 Date : 04/06/2022 B.Sc 6th Sem: |
| Week 12 |

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| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: Binding Energy curve |
| Week 12 Day 1 Date : 06/06/2022 B.Sc 6th Sem:Determination of mass by Bain-Bridge |
| Week 12 Day 2 Date : 07/06/2022 B.Sc 6th Sem: Bain-Bride and Jordan mass spectrograph |
| Week 12 Day 3 Date : 08/06/2022 B.Sc 6th Sem: Determination of charge by Mosley law |
| Week 12 Day 4 Date : 09/06/2022 B.Sc 6th Sem: numericals and problems |
| Week 12 Day 5 Date : 10/06/2022 B.Sc 6th Sem: Interaction of heavy charged particles (Alpha particles) |
| Week 12 Day 6 Date : 11/06/2022 B.Sc 6th Sem: alpha disintegration and its theory |
| Week 13 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: Gamow's Theory |
| Week 13 Day 1 Date : 13/06/2022 B.Sc 6th Sem:Energy loss of heavy charged particle |
| Week 13 Day 2 Date : 14/06/2022 Holiday: Sant Kabir Jayanti |
| Week 13 Day 3 Date : 15/06/2022 B.Sc 6th Sem: Energetics of alpha -decay |
| Week 13 Day 4 Date : 16/06/2022 B.Sc 6th Sem: Range and straggling of alpha particles. Geiger-Nuttal law |
| Week 13 Day 5 Date : 17/06/2022 B.Sc 6th Sem: Introduction of light charged particle (Beta-particle) |
| Week 13 Day 6 Date : 18/06/2022 B.Sc 6th Sem: Origin of continuous beta-spectrum (neutrino hypothesis) |
| Week 14 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: Range and straggling of alpha particles. Geiger-Nuttal law |
| Week 14 Day 1 Date : 20/06/2022 B.Sc 6th Sem:types of beta decay and energetics of beta decay |
| Week 14 Day 2 Date : 21/06/2022 B.Sc 6th Sem: Energy loss of beta- particles (ionization) |
| Week 14 Day 3 Date : 22/06/2022 B.Sc 6th Sem: Range of electrons |
| Week 14 Day 4 Date : 23/06/2022 B.Sc 6th Sem: absorption of beta-particles |
| Week 14 Day 5 Date : 24/06/2022 B.Sc 6th Sem: Interaction of Gamma Ray |
| Week 14 Day 6 Date : 25/06/2022 |

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| B.Sc 6th Sem: Nature of gamma rays, Energetics of gamma rays |
| Week 15 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: types of beta decay and energetics of beta decay |
| Week 15 Day 1 Date : 27/06/2022 |
| B.Sc 6th Sem: passage of Gamma radiations through matter |
| Week 15 Day 2 Date : 28/06/2022 |
| B.Sc 6th Sem: photoelectric effect |
| Week 15 Day 3 Date : 29/06/2022 |
| B.Sc 6th Sem: Compton effect |
| Week 15 Day 4 Date : 30/06/2022 |
| B.Sc 6th Sem: pair production, annihilation |
| Week 15 Day 5 Date : 01/07/2022 |
| B.Sc 6th Sem: Absorption of Gamma rays (Mass attenuation coefficient) and its application |
| Week 15 Day 6 Date : 02/07/2022 |
| B.Sc 6th Sem: |
| Week 16 |
| Chapter: B.Sc 6th Sem : NUCLEAR PHYSICS |
| Assignments: Photoelectric Effect & Compton Effect |
| Week 16 Day 1 Date : 04/07/2022 |
| B.Sc 6th Sem: Linear accelerator |
| Week 16 Day 2 Date : 05/07/2022 |
| B.Sc 6th Sem: , Tandem accelerator |
| Week 16 Day 6 Date : 06/07/2022 |
| B.Sc 6th Sem: Cyclotron and Betatron accelerators |
| Week 16 Day 6 Date : 07/07/2022 |
| B.Sc 6th Sem: Ionization chamber |
| Week 16 Day 6 Date : 08/07/2022 |
| B.Sc 6th Sem: , proportional counter, G.M. counter |
| Week 16 Day 6 Date : 09/07/2022 |
| B.Sc 6th Sem: scintillation counter and semiconductor detector |