

## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **B.sc 2<sup>nd</sup> Sem. (N.M)**

Subject: **Electromagnetic induction and Electronic Devices**

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day1      | Introduction   |
|      | Day2      | Growth and decay of current in a circuit with (a) Capacitance and resistance     |
|      | Day3      | Growth and decay of current in a circuit with (a) Capacitance and resistance     |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 7-Jan-18  | Sunday   |
| 2    | Day4      | (b) resistance and inductance  |
|      | Day5      | (c) Capacitance and inductance   |
|      | Day6      | (d) Capacitance resistance and inductance.                                       |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 14-Jan-18 | Sunday   |
| 3    | Day7      | (d) Capacitance resistance and inductance.                                       |
|      | Day8      | Numerical problems   |
|      | Day9      | Numerical problems & assignment 1  |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 21-Jan-18 | Sunday   |
| 4    | 22-Jan-18 | Vasant Panchami  |
|      | Day10     | doubts   |
|      | 24-Jan-18 | Sir Chhotu Ram Jayanti   |
|      | Day11     | AC circuit analysis using complex variables with (a) capacitance and resistance, |
|      | 26-Jan-18 | Republic Day   |
|      |           |  |
|      | 28-Jan-18 | Sunday   |
| 5    | Day12     | (b) resistance and inductance  |
|      | Day13     | (c) capacitance and inductance   |
|      | Day14     | (d) capacitance, inductance and resistance Series and parallel resonant circuit. |

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Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **B.sc 2<sup>nd</sup> Sem. (N.M)**

Subject: **Electromagnetic induction and Electronic Devices**

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           |   |
|      |           |   |
|      |           |   |
|      | 4-Feb-18  | Sunday  |
| 2    | Day15     | (d) capacitance, inductance and resistance Series and parallel resonant circuit.        |
|      | Day16     | Quality factor (Sharpness of resonance).  |
|      | Day17     | Doubts of unit 1 & assignments 2  |
|      |           |   |
|      |           |   |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti   |
|      | 11-Feb-18 | Sunday  |
| 3    | Day18     | Class test 1  |
|      | 13-Feb-18 | Maha Shivratri  |
|      | Day19     | Energy bands in solids  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 18-Feb-18 | Sunday  |
| 4    | Day20     | Intrinsic and extrinsic semiconductor, Hall effect,                                     |
|      | Day21     | P-N junction diode and their V-I characteristics. Zener and avalanche breakdown.        |
|      | Day22     | Resistance of a diode, Light Emitting diodes (LED). Photo conduction in semiconductors, |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 25-Feb-18 | Sunday  |
| 5    | Day23     | photodiode, Solar Cell.   |
|      | Day24     | : P-N junction half wave and full wave rectifier  |
|      | Day25     | Types of filter circuits (L and - with theory)  |

## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **B.sc 2<sup>nd</sup> Sem. (N.M)**

Subject: **Electromagnetic induction and Electronic Devices**

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | Guru Ravidas Birthday  |
|      | 2-Mar-18  | Holi   |
|      |           |  |
|      | 4-Mar-18  | Sunday   |
| 2    | Day26     | Zener diode as voltage regulator, simple regulated power supply                                    |
|      | Day27     | Numerical problems & assignment 3  |
|      | Day28     | Junction Transistors, Bipolar transistors, working of NPN and PNP transistors,                     |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 11-Mar-18 | Sunday   |
| 3    | Day29     | Transistor connections (C-B, C-E, C-C mode), constants of transistor                               |
|      | Day30     | Transistor characteristic curves (excluding h parameter analysis), advantage of C-B configuration. |
|      | Day31     | C.R. O. (Principle, construction and working in detail)..  |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 18-Mar-18 | Sunday   |
| 4    | Day32     | Numerical problems & assignment 4  |
|      | Day33     | Doubts   |
|      | Day34     | Class test 2   |
|      |           |  |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev  |
|      |           |  |
|      | 25-Mar-18 | Sunday/ Ram Navami   |
| 5    | Day35     | Transistor Amplifiers : Transistor biasing, methods of Transistor biasing and stabilization.       |
|      | Day36     | methods of Transistor biasing and stabilization.D.C. load line                                     |
|      | Day37     | Common-base and common-emitter transistor biasing  |
|      | 29-Mar-18 | Mahavir Jayanti  |
|      | Day49     |  |

## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **B.sc 2<sup>nd</sup> Sem. (N.M)**

Subject: **Electromagnetic induction and Electronic Devices**

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           | Sunday  |
|      | 1-Apr-18  |   |
|      | Day50     | Common-base, common- emitter amplifiers   |
|      | Day51     | Classification of amplifiers  |
|      | Day52     | Resistance-capacitance (R-C) coupled amplifier                                    |
|      | Day53     |   |
|      |           |   |
|      | 8-Apr-18  | Sunday  |
| 2    | Day54     | Feed-back in amplifiers, advantage of negative feedback Emitter follower.         |
|      | Day55     | Oscillators : Oscillators, Principle of Oscillation, Classification of Oscillator |
|      | Day56     | Condition for self sustained oscillation  |
|      | Day57     |   |
|      |           |   |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi  |
|      | 15-Apr-18 | Sunday  |
| 3    | Day58     | Barkhausen Criterion for oscillations. Tuned collector common emitter oscillator  |
|      | Day59     | Hartley oscillator.   |
|      | 18-Apr-18 | Parashurama Jayanti   |
|      | Day60     |   |
|      |           |   |
|      | 22-Apr-18 | Sunday  |
| 4    | Day61     | Colpitt's oscillator  |
|      | Day62     | Doubts  |
|      | Day63     | Numerical problems & assignment 5   |
|      | Day64     | Syllabus complete   |

## Lesson Plan

Name of the Assistant/ Associate Professor - SHEELA

Class and Section: B.sc 2nd sem (N.M) ,Sec -

Subject: Electro-magnetic Induction and Electronic Devices

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day1      | Introduction   |
|      | Day2      | Growth and decay of current in a circuit with (a) Capacitance and resistance     |
|      | Day3      | Growth and decay of current in a circuit with (a) Capacitance and resistance     |
|      |           |  |
|      |           |  |
|      | 7-Jan-18  | Sunday   |
| 2    | Day4      | (b) resistance and inductance  |
|      | Day5      | (c) Capacitance and inductance   |
|      | Day6      | (d) Capacitance resistance and inductance.                                       |
|      |           |  |
|      |           |  |
|      | 14-Jan-18 | Sunday   |
| 3    | Day7      | (d) Capacitance resistance and inductance.                                       |
|      | Day8      | Numerical problems   |
|      | Day9      | Numerical problems & assignment 1  |
|      |           |  |
|      |           |  |
|      | 21-Jan-18 | Sunday   |
| 4    | 22-Jan-18 | <u>Vasant Panchami</u>   |
|      | Day10     | doubts   |
|      | 24-Jan-18 | <u>Sir Chhotu Ram Jayanti</u>  |
|      | Day11     | AC circuit analysis using complex variables with (a) capacitance and resistance, |
|      | 26-Jan-18 | <u>Republic Day</u>  |
|      |           |  |
|      | 28-Jan-18 | Sunday   |
| 5    | Day12     | (b) resistance and inductance  |
|      | Day13     | (c) capacitance and inductance   |
|      | Day14     | (d) capacitance, inductance and resistance Series and parallel resonant circuit. |

## Lesson Plan

Name of the Assistant/ Associate Professor - SHEELA

Class and Section: B.sc 2nd sem (N.M) ,Sec -

Subject: Electro-magnetic Induction and Electronic Devices

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           |   |
|      |           |   |
|      |           |   |
|      | 4-Feb-18  | Sunday  |
| 2    | Day15     | (d) capacitance, inductance and resistance Series and parallel resonant circuit.        |
|      | Day16     | Quality factor (Sharpness of resonance).  |
|      | Day17     | Doubts of unit 1 & assignments 2  |
|      |           |   |
|      |           |   |
|      | 10-Feb-18 | <u>Maharshi Dayanand Saraswati Jayanti</u>  |
|      | 11-Feb-18 | Sunday  |
| 3    | Day18     | Class test 1  |
|      | 13-Feb-18 | <u>Maha Shivratri</u>   |
|      | Day19     | Energy bands in solids  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 18-Feb-18 | Sunday  |
| 4    | Day20     | Intrinsic and extrinsic semiconductor, Hall effect,                                     |
|      | Day21     | P-N junction diode and their V-I characteristics. Zener and avalanche breakdown.        |
|      | Day22     | Resistance of a diode, Light Emitting diodes (LED). Photo conduction in semiconductors, |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 25-Feb-18 | Sunday  |
| 5    | Day23     | photodiode, Solar Cell.   |
|      | Day24     | : P-N junction half wave and full wave rectifier  |
|      | Day25     | Types of filter circuits (L and - with theory)  |

## Lesson Plan

Name of the Assistant/ Associate Professor - SHEELA

Class and Section: B.sc 2nd sem (N.M) ,Sec -

Subject: Electro-magnetic Induction and Electronic Devices

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | <u>Guru Ravidas Birthday</u>   |
|      | 2-Mar-18  | <u>Holi</u>  |
|      | 4-Mar-18  | Sunday   |
| 2    | Day26     | Zener diode as voltage regulator, simple regulated power supply                                    |
|      | Day27     | Numerical problems & assignment 3  |
|      | Day28     | Junction Transistors, Bipolar transistors, working of NPN and PNP transistors,                     |
|      |           |  |
|      | 11-Mar-18 | Sunday   |
| 3    | Day29     | Transistor connections (C-B, C-E, C-C mode), constants of transistor                               |
|      | Day30     | Transistor characteristic curves (excluding h parameter analysis), advantage of C-B configuration. |
|      | Day31     | C.R. O. (Principle, construction and working in detail)..  |
|      |           |  |
|      | 18-Mar-18 | Sunday   |
| 4    | Day32     | Numerical problems & assignment 4  |
|      | Day33     | Doubts   |
|      | Day34     | Class test 2   |
|      | 23-Mar-18 | <u>Shaheedi Diwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>                                       |
|      | 25-Mar-18 | Sunday/ <u>Ram Navami</u>  |
| 5    | Day35     | Transistor Amplifiers : Transistor biasing, methods of Transistor biasing and stabilization.       |
|      | Day36     | methods of Transistor biasing and stabilization.D.C. load line                                     |
|      | Day37     | Common-base and common-emitter transistor biasing  |
|      | 29-Mar-18 | <u>Mahavir Jayanti</u>   |
|      |           |  |

### **Lesson Plan**

Name of the Assistant/ Associate Professor - SHEELA

Class and Section: B.sc 2nd sem (N.M) ,Sec -

Subject: Electro-magnetic Induction and Electronic Devices

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | 1-Apr-18  | Sunday  |
|      | Day38     | Common-base, common- emitter amplifiers   |
|      | Day39     | Classification of amplifiers  |
|      | Day40     | Resistance-capacitance (R-C) coupled amplifier                                    |
|      |           |   |
|      |           |   |
| 2    | 8-Apr-18  | Sunday  |
|      | Day41     | Feed-back in amplifiers, advantage of negative feedback Emitter follower.         |
|      | Day42     | Oscillators : Oscillators, Principle of Oscillation, Classification of Oscillator |
|      | Day43     | Condition for self sustained oscillation  |
|      |           |   |
|      |           |   |
| 3    | 14-Apr-18 | <a href="#">Dr Ambedkar Jayanti</a> / <a href="#">Vaisakhi</a>                    |
|      | 15-Apr-18 | Sunday  |
|      | Day44     | Barkhausen Criterion for oscillations. Tuned collector common emitter oscillator  |
|      | Day45     | Hartley oscillator.   |
|      | 18-Apr-18 | <a href="#">Parashurama Jayanti</a>   |
|      | Day 46    | Colpitt's oscillator  |
|      |           |   |
|      |           |   |
| 4    | 22-Apr-18 | Sunday  |
|      | Day47     | Doubts  |
|      | Day48     | Numerical problems & assignment 5   |
|      | Day49     | Syllabus complete   |
|      |           |   |
|      |           |   |

## Lesson Plan

Name of the Assistant/ Associate Professor - NISHA

Class and Section: B.sc 6<sup>th</sup> sem (N.M)

Subject: ATOMIC MOLECULAR AND LASER PHYSICS

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | Day1      | Introduction  |
|      | Day2      | Vector atom model   |
|      | Day3      | quantum numbers associated with vector atom model,                      |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 7-Jan-18  | Sunday  |
| 2    | Day4      | Penetrating and non penetrating orbits                                  |
|      | Day5      | spectral lines in different series of alkali spectra                    |
|      | Day6      | Spin orbit interaction  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 14-Jan-18 | Sunday  |
| 3    | Day7      | doublet term separation   |
|      | Day8      | LS Coupling   |
|      | Day9      | Numerical problems & assignment 1                                       |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 21-Jan-18 | Sunday  |
| 4    | 22-Jan-18 | Vasant Panchami   |
|      | Day10     | doubts  |
|      | 24-Jan-18 | Sir Chhotu Ram Jayanti  |
|      | Day11     | JJ Coupling   |
|      | 26-Jan-18 | Republic Day  |
|      |           |   |
|      | 28-Jan-18 | Sunday  |
| 5    | Day12     | (expressions for interaction energies for LS and jj coupling required). |
|      | Day13     | Zeeman effect (normal)  |
|      | Day14     | Anomalous Zeeman effect   |

## Lesson Plan

## Lesson Plan

Name of the Assistant/ Associate Professor - NISHA

Class and Section: B.sc 6<sup>th</sup> sem (N.M) ,Sec -

Subject: ATOMIC MOLECULAR AND LASER PHYSICS

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           |   |
|      |           |   |
|      |           |   |
|      | 4-Feb-18  | Sunday  |
| 2    | Day15     | Zeeman pattern of D1 and D2 lines of Na-atom                      |
|      | Day16     | Paschen, Back effect of a single valence electron system          |
|      | Day17     | Weak field Stark effect of Hydrogen Atom                          |
|      |           |   |
|      |           |   |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti                               |
|      | 11-Feb-18 | Sunday  |
| 3    | Day18     | Revision of Stark effect  |
|      | 13-Feb-18 | Maha Shivratri  |
|      | Day19     | Numerical problems  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 18-Feb-18 | Sunday  |
| 4    | Day20     | Doubts & assignment-2   |
|      | Day21     | Numerical   |
|      | Day22     | Discrete set of electronic energies of molecules                  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 25-Feb-18 | Sunday  |
| 5    | Day23     | quantisation of Vibrational energy                                |
|      | Day24     | Quantization of rotational energy                                 |
|      | Day25     | Quantization of vibrational and rotational energy in Raman effect |

## Lesson Plan

Name of the Assistant/ Associate Professor -NISHA

Class and Section: B.sc 6<sup>th</sup> sem (N.M) ,Sec -

Subject: ATOMIC MOLECULAR AND LASER PHYSICS

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | Guru Ravidas Birthday                                    |
|      | 2-Mar-18  | Holi   |
|      |           |  |
|      | 4-Mar-18  | Sunday   |
| 2    | Day26     | Stoke's and anti Stoke's lines.                          |
|      | Day27     | Numerical problems & assignment 3                        |
|      | Day28     | Doubts   |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 11-Mar-18 | Sunday   |
| 3    | Day29     | Numerical problems                                       |
|      | Day30     | Introduction to lasers                                   |
|      | Day31     | Properties of lasers                                     |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 18-Mar-18 | Sunday   |
| 4    | Day32     | Continue   |
|      | Day33     | Einstein's coefficients and possibility of amplification |
|      | Day34     | Doubts   |
|      |           |  |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev        |
|      |           |  |
|      | 25-Mar-18 | Sunday/ Ram Navami                                       |
| 5    | Day35     | Numerical problems & assignment 4                        |
|      | Day36     | momentum transfer,                                       |
|      | Day37     | life time of a level                                     |
|      | 29-Mar-18 | Mahavir Jayanti  |

|  |       |                                |
|--|-------|--------------------------------|
|  | Day38 | kinetics of optical absorption |
|  |       |                                |

**Lesson Plan**

**Lesson Plan**

Name of the Assistant/ Associate Professor NISHA

Class and Section: B.sc 6<sup>th</sup> sem (N.M) ,Sec -

Subject: ATOMIC MOLECULAR AND LASER PHYSICS

| Week | Date      | Topics                                    |
|------|-----------|---|
| 1    |           | Sunday                                    |
|      | 1-Apr-18  |   |
|      | Day39     | kinetics of optical absorption            |
|      | Day40     | numericals                                |
|      |           |   |
|      | Day41     | Laser pumping                             |
|      |           |   |
|      | 8-Apr-18  | Sunday                                    |
| 2    | Day42     | He- ne laser                              |
|      | Day43     | Ruby laser                                |
|      |           |   |
|      | Day44     | Application of laser in field of medicine |
|      |           |   |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi            |
|      | 15-Apr-18 | Sunday                                    |
| 3    | Day45     | Application of laser in field of industry |
|      |           |   |
|      | 18-Apr-18 | Parashurama Jayanti                       |
|      | Day46     | Revision                                  |
|      |           |   |
|      |           |   |
|      | 22-Apr-18 | Sunday                                    |
| 4    | Day47     | Numerical problems                        |
|      | Day48     | doubts                                    |

|  |       |                    |
|--|-------|--------------------|
|  | Day49 | Syllabus completed |
|  |       |                    |
|  |       |                    |
|  |       |                    |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: B.sc 6<sup>th</sup> sem (N.M)

Subject: Atomic Physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day1      | Introduction   |
|      | Day2      | About atom and four quantum numbers                                |
|      | Day3      | Pauli principle  |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 7-Jan-18  | Sunday   |
| 2    | Day4      | Vector atom model  |
|      | Day5      | quantum numbers associated with vector atom model                  |
|      | Day6      | penetrating and non- penetrating orbits (qualitative description ) |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 14-Jan-18 | Sunday   |
| 3    | Day7      | spectral lines in different series of alkali spectra,              |
|      | Day8      | spin orbit interaction   |
|      | Day9      | spin orbit interaction   |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 21-Jan-18 | Sunday   |
| 4    | 22-Jan-18 | Vasant Panchami  |
|      | Day10     | doublet term separation LS or Russell-Saunders Coupling            |
|      | 24-Jan-18 | Sir Chhotu Ram Jayanti   |
|      | Day11     | jj coupling  |
|      | 26-Jan-18 | Republic Day   |
|      |           |  |
|      | 28-Jan-18 | Sunday   |
| 5    | Day12     | Doubts & assignment 1  |
|      | Day13     | Numerical problem  |
|      | Day14     | doubts   |

## Lesson Plan

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: B.sc 6<sup>th</sup> sem (N.M)

Subject: Atomic Physics

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           |   |
|      |           |   |
|      |           |   |
|      | 4-Feb-18  | Sunday  |
| 2    | Day15     | Class test 1  |
|      | Day16     | Zeeman effect (normal)                                  |
|      | Day17     | Zeeman effect (Anormalous)                              |
|      |           |   |
|      |           |   |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti                     |
|      | 11-Feb-18 | Sunday  |
| 3    | Day18     | Numerical problems                                      |
|      | 13-Feb-18 | Maha Shivratri  |
|      | Day19     | Doubts & assignment 2                                   |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 18-Feb-18 | Sunday  |
| 4    | Day20     | doubts  |
|      | Day21     | Zeeman pattern of D 1 and D2 lines of Na-atom,          |
|      | Day22     | numericals  |
|      |           |   |
|      |           |   |
|      | 25-Feb-18 | Sunday  |
| 5    | Day23     | Paschen Back effect of a single valence electron system |
|      | Day24     | Weak field Stark effect of Hydrogen atom.               |
|      | Day25     | Discrete set of electronic energies of molecules        |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: B.sc 6<sup>th</sup> sem (N.M)

Subject: Atomic Physics

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | 1-Mar-18  | Guru Ravidas Birthday   |
|      | 2-Mar-18  | Holi  |
|      |           |   |
|      | 4-Mar-18  | Sunday  |
| 2    | Day26     | quantisation of Vibrational energies  |
|      | Day27     | Numerical problems & assignment 3   |
|      | Day28     | quantisation of rotational energies   |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 11-Mar-18 | Sunday  |
| 3    | Day29     | Raman effect (Quantitative description)   |
|      | Day30     | Stoke's and anti Stoke's lines. Numerical problems  |
|      | Day31     | Doubts  |
|      |           |   |
|      |           |   |
|      |           |   |
|      | 18-Mar-18 | Sunday  |
| 4    | Day32     | Class test 2.   |
|      | Day33     | Introduction of laser   |
|      | Day34     | Main features of a laser : Directionality, high intensity, high degree of coherence, spatial and temporal coherence |
|      |           |   |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev   |
|      |           |   |
|      | 25-Mar-18 | Sunday/ Ram Navami  |
| 5    | Day35     | Einstein's coefficients and possibility of amplification  |
|      | Day36     | Doubts & assignment 4   |
|      | Day37     | momentum transfer   |
|      | 29-Mar-18 | Mahavir Jayanti   |

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**Lesson Plan**

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Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: B.sc 6<sup>th</sup> sem (N.M)

Subject: Atomic Physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    |           | Sunday   |
|      | 1-Apr-18  |  |
|      | Day38     | life time of a level, kinetics of optical absorption         |
|      | Day39     | Threshold condition for laser emission                       |
|      | Day40     | Laser pumping  |
|      |           |  |
|      |           |  |
|      | 8-Apr-18  | Sunday   |
| 2    | Day41     | He-Ne laser  |
|      | Day42     | RUBY laser   |
|      | Day43     | Applications of laser in the field of medicine and industry. |
|      |           |  |
|      |           |  |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi                               |
|      | 15-Apr-18 | Sunday   |
| 3    | Day44     | Doubts   |
|      | Day45     | Numerical problems & assignment 5                            |
|      | 18-Apr-18 | Parashurama Jayanti  |
|      |           |  |
|      |           |  |
|      | 22-Apr-18 | Sunday   |
| 4    | Day46     | Revision of unit 1   |
|      | Day47     | Revision of unit 2   |

|  |       |                    |
|--|-------|--------------------|
|  | Day48 | Revision of unit 3 |
|  |       |                    |
|  |       |                    |
|  |       |                    |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL

Class and Section:

B.Sc (HP) IV semester

Subject:

Vibration and Optics

| Week | Date   | Topics  |
|------|--------|---|
| 1    | Day 1  | Introduction to Optics  |
|      | Day 2  | Law of Reflection   |
|      | Day 3  | Law of Refraction   |
|      | Day 4  | Interference  |
|      | Day 5  | Coherence   |
|      |        |   |
| 2    | Day 6  | Fresnel Diffraction: Introduction                                   |
|      | Day 7  | Huygens-Fresnel Theory  |
|      | Day 8  | Fresnel's assumptions   |
|      | Day 9  | Rectilinear propagation of light                                    |
|      | Day 10 | Continue  |
|      |        |   |
| 3    | Day 11 | Diffraction at a circular aperture                                  |
|      | Day 12 | Mathematical Treatment of diffraction at circular aperture          |
|      | Day 13 | Intensity at a point away from the centre                           |
|      | Day 14 | Diffraction at an opaque circular disc                              |
|      | Day 15 | Diffraction pattern due to a straight edge                          |
|      |        |   |
| 4    |        | <b>Vasant Panchami</b>  |
|      | Day 16 | Position of Maxima and Minimum intensity                            |
|      |        | <b>Sir Chhotu Ram Jayanti</b>                                       |
|      | Day 17 | Intensity at a point inside the geometrical shadow ( Straight edge) |
|      |        | <b>Republic day</b>   |
|      |        |   |
| 5    | Day 18 | Diffraction Pattern due to a narrow slit                            |
|      | Day 19 | Diffraction Pattern due to a narrow wire                            |
|      | Day 20 | Continue.....   |

## Lesson Plan

Name of the Assistant/ Associate professor : Dr. RAHUL

Class and Section:

B.Sc (HP) IV semester

Subject:

Vibration and Optics

| <b>Week</b> | <b>Date</b>   | <b>Topics</b>   |
|-------------|---------------|---|
| <b>6</b>    | Day 21        | Cornu's spiral  |
|             | Day 22        | Maxima and minima in diffraction patterns                 |
|             |               | <b>Sunday</b>   |
| <b>7</b>    | Day 23        | Cornu's spiral ( Alternative method)                      |
|             | Day 24        | Continue.....   |
|             | Day 25        | Diffraction at a straight edge                            |
|             | Day 26        | Fresnel's Integrals                                       |
|             | Day 27        | Problem discussion related Fresnel's Integrals            |
|             |               | <b>Maharshi Dayanand Saraswati Jayanti</b>                |
|             | <b>Sunday</b> |   |
| <b>8</b>    | Day 28        | Zone Plate  |
|             |               | <b>Maha Shivratri</b>                                     |
|             | Day 29        | Action of Zone plate for an incident spherical wave front |
|             | Day 30        | Fresnel and Fraunhofer diffraction                        |
|             | Day 31        | Problem discussion related diffraction                    |
|             |               | <b>Sunday</b>   |
| <b>9</b>    | Day 32        | Introduction of Holography                                |
|             | Day 33        | Principle of Holography                                   |
|             | Day 34        | Coaxial Holography  |
|             | Day 35        | OFF-Axis Holography                                       |
|             | Day 36        | Holograms   |
|             |               | <b>Sunday</b>   |
| <b>10</b>   | Day 37        | Classification of Holograms                               |
|             | Day 38        | Continue  |
|             | Day 39        | Application of Holograms                                  |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL

Class and Section:

B.Sc (HP) IV semester

Subject:

Vibration and Optics

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>11</b>   |             | <b>Guru Ravidas Birthday</b>   |
|             |             | <b>Holi</b>  |
|             |             | <b>Sunday</b>  |
| <b>12</b>   | Day 40      | Fraunhofer diffraction   |
|             | Day 41      | Fraunhofer diffraction at single slit                                |
|             | Day 42      | Intensity distribution in diffraction pattern due to a single slit   |
|             | Day 43      | Continue...  |
|             | Day 44      | Fraunhofer diffraction at a circular aperture                        |
|             |             | <b>Sunday</b>  |
| <b>13</b>   | Day 45      | Fraunhofer diffraction at a double slit                              |
|             | Day 46      | Distinction between single slit and double slit diffraction patterns |
|             | Day 47      | Fraunhofer diffraction at a N slit                                   |
|             | Day 48      | Continue...  |
|             | Day 49      | Plane Diffraction grating  |
|             |             | <b>Sunday</b>  |
| <b>14</b>   | Day 50      | Theory of plane diffraction grating                                  |
|             | Day 51      | Width of principal maxima  |
|             | Day 52      | Oblique incident   |
|             | Day 53      | Dispersive power of grating  |
|             |             | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>           |
|             |             | <b>Sunday/ Ramnavami</b>   |
| <b>15</b>   | Day 54      | Resolving power  |
|             | Day 55      | Resolving power of plane transmission grating                        |
|             | Day 56      | Continue..   |
|             |             | <b>Mahavir Jayanti</b>   |
|             | Day 57      | Problem discussion related resolving power                           |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL  
Class and Section: B.Sc (HP) IV semester  
Subject: Vibration and Optics

| Week      | Date   | Topics  |
|-----------|--------|---|
| <b>16</b> |        | <b>Sunday</b>   |
|           | Day 58 | Kirchhoff's integral theorem                          |
|           | Day 59 | Fresnel-Kirchhoff's integral theorem                  |
|           | Day 60 | application to diffraction problems                   |
|           | Day 61 | Problem discussion related Kirchhoff integral theorem |
|           | Day 62 | Problem discussion related Kirchhoff integral theorem |
|           |        |   |
|           |        | <b>Sunday</b>   |
| <b>17</b> | Day 63 | Assignment preparation                                |
|           | Day 64 | Assignment preparation                                |
|           | Day 65 | Discussion of important question related unit-I       |
|           | Day 66 | Discussion of important question related unit-I       |
|           | Day 67 | Discussion of important question related unit-I       |
|           |        | <b>Dr. Ambedkar Jayanti/Vaisakhi</b>                  |
|           |        |   |
|           |        | <b>Sunday</b>   |
| <b>18</b> | Day 68 | Discussion of important question related unit-II      |
|           | Day 69 | Discussion of important question related unit-II      |
|           |        | <b>Parashurama Jayanti</b>                            |
|           | Day 70 | Discussion of important question related unit-II      |
|           | Day 71 | Discussion of important question related unit-II      |
|           |        |   |
|           |        |   |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: Statistical Mechanics

| Week     | Date   | Topics  |
|----------|--------|---|
| <b>1</b> | Day 1  | Review of Thermodynamics  |
|          | Day 2  | Introduction to Statistical Mechanics   |
|          | Day 3  | Phase space   |
|          | Day 4  | Ensembles   |
|          | Day 5  | Liouville theorem   |
|          |        |   |
| <b>2</b> | Day 6  | conservation of extension   |
|          | Day 7  | Equation of motion  |
|          | Day 8  | Equal a priori probability  |
|          | Day 9  | Question related Probability  |
|          | Day 10 | Quantization of phase space   |
|          |        |   |
| <b>3</b> | Day 11 | classical limit   |
|          | Day 12 | Statistical equilibrium   |
|          | Day 13 | symmetry of wave functions  |
|          | Day 14 | effect of symmetry on counting various distributions using micro canonical ensemble |
|          | Day 15 | Effect of symmetry on counting various distributions using micro canonical ensemble |
|          |        |   |
| <b>4</b> |        | <b>Vasant Panchami</b>  |
|          | Day 16 | Problem discussion related I unit   |
|          |        | <b>Sir Chhotu Ram Jayanti</b>   |
|          | Day 17 | Introduction to Entropy   |
|          |        | <b>Republic day</b>   |
|          |        |   |
| <b>5</b> | Day 18 | Entropy of an ideal gas   |
|          | Day 19 | Gibbs paradox   |
|          | Day 20 | Sackur-Tetrode equation   |

## Lesson Plan

Name of the Assistant/ Associate professor : Dr. RAHUL

Class and Section:

M.Sc (P) 2<sup>nd</sup> semester

Subject:

Statistical Mechanics

| <b>Week</b> | <b>Date</b> | <b>Topics</b>   |
|-------------|-------------|---|
| <b>6</b>    | Day 21      | Entropy of a system in contact with a reservoir   |
|             | Day 22      | Introduction of Ensembles   |
|             |             | <b>Sunday</b>   |
| <b>7</b>    | Day 23      | Microcanonical canonical ensemble   |
|             | Day 24      | Canonical ensemble  |
|             | Day 25      | Grand canonical ensemble  |
|             | Day 26      | Ideal gas in Microcanonical Canonical ensemble  |
|             | Day 27      | Ideal gas in a canonical ensemble   |
|             |             | <b>Maharshi Dayanand Saraswati Jayanti</b><br><b>Sunday</b>                               |
| <b>8</b>    | Day 28      | Ideal gas in Grand canonical ensemble   |
|             |             | <b>Maha Shivratri</b>   |
|             | Day 29      | Comparison of various ensembles   |
|             | Day 30      | Quantum distribution using other ensembles  |
|             | Day 31      | Problem discussion related II unit  |
|             |             | <b>Sunday</b>   |
| <b>9</b>    | Day 32      | Classical statistical mechanics   |
|             | Day 33      | Quantum statistical mechanics   |
|             | Day 34      | Transition from classical statistical mechanics to quantum statistical mechanics          |
|             | Day 35      | Indistinguishability and quantum statistics identical particles and symmetry requirements |
|             | Day 36      | Distribution of particles in system   |
|             |             | <b>Sunday</b>   |
| <b>10</b>   | Day 37      | Introduction and types of statistics  |
|             | Day 38      | Maxwell Boltzmann statistics  |
|             | Day 39      | Bose Einstein statistics  |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL

Class and Section:

M.Sc (P) 2<sup>nd</sup> semester

Subject:

Statistical Mechanics

| Week | Date   | Topics   |
|------|--------|--|
| 11   |        | <b>Guru Ravidas Birthday</b>   |
|      |        | <b>Holi</b>  |
|      |        | <b>Sunday</b>  |
| 12   | Day 40 | Fermi Dirac statistics   |
|      | Day 41 | Comparison between Maxwell Boltzmann, Bose Einstein and Fermi Dirac statistics |
|      | Day 42 | Fermi Gas  |
|      | Day 43 | Bose Einstein Condensation   |
|      | Day 44 | B.E. gas   |
|      |        | <b>Sunday</b>  |
| 13   | Day 45 | Thermal properties of B.E. gas   |
|      | Day 46 | Liquid Helium  |
|      | Day 47 | Energy of F-D gas  |
|      | Day 48 | Pressure of F-D gas  |
|      | Day 49 | Electrons in metals  |
|      |        | <b>Sunday</b>  |
| 14   | Day 50 | Thermionic Emission  |
|      | Day 51 | Problem discussion related III unit  |
|      | Day 52 | Cluster expansion  |
|      | Day 53 | Cluster expansion for a classical gas  |
|      |        | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>                     |
|      |        | <b>Sunday/ Ramnavami</b>   |
| 15   | Day 54 | Continue.....  |
|      | Day 55 | Virial equation of state   |
|      | Day 56 | Van der Waals gas  |
|      |        | <b>Mahavir Jayanti</b>   |
|      | Day 57 | Phase transition   |

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. RAHUL

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: Statistical Mechanics

| Week      | Date   | Topics  |                                      |
|-----------|--------|---|--------------------------------------|
| <b>16</b> |        | <b>Sunday</b>                                   |                                      |
|           | Day 58 | Phase transition of first kind                  |                                      |
|           | Day 59 | Phase transition of second kind                 |                                      |
|           | Day 60 | Ising Model Bragg                               |                                      |
|           | Day 61 | Williams Approximation (Half part)              |                                      |
|           | Day 62 | Bragg Williams Approximation                    |                                      |
|           |        |   | <b>Sunday</b>                        |
| <b>17</b> | Day 63 | Fowler Guggenheim Approximation (Half Part)     |                                      |
|           | Day 64 | Fowler Guggenheim Approximation                 |                                      |
|           | Day 65 | Ising Model in one dimensions                   |                                      |
|           | Day 66 | Ising Model in two dimensions                   |                                      |
|           | Day 67 | Fluctuations in ensembles                       |                                      |
|           |        |   | <b>Dr. Ambedkar Jayanti/Vaisakhi</b> |
|           |        |   | <b>Sunday</b>                        |
| <b>18</b> | Day 68 | Energy fluctuation in quantum statistics        |                                      |
|           | Day 69 | Concentration fluctuation in quantum statistics |                                      |
|           |        |   | <b>Parashurama Jayanti</b>           |
|           | Day 70 | Random walk                                     |                                      |
|           | Day 71 | One dimensional random walk                     |                                      |
|           |        |   | <b>Sunday</b>                        |
| <b>19</b> | Day 72 | Brownian motion                                 |                                      |
|           | Day 73 | Problem discussion related IV unit              |                                      |
|           | Day 74 | Unsolved question related I unit                |                                      |
|           | Day 75 | Unsolved question related II unit               |                                      |
|           | Day 76 | Unsolved question related III unit              |                                      |
|           | Day 77 | Unsolved question related IV unit               |                                      |

Lesson Plan

Name of the Assistant/ UTTAM NAIN

Class and Section:..... HC-2 and HM-2

Subject:..... BHM126 (Optional Physics)

| Week |        | Topics                               |
|------|--------|--------------------------------------|
| 1    | Day 1  | Energy bands in solid                |
|      | Day 2  | Intrinsic & Extrinsic semiconductor  |
|      | Day 3  | Hall Effect                          |
|      | Day 4  | P-N junction diode & characteristics |
|      | Day 5  | Zener                                |
|      | Day 6  | Practical                            |
|      |        | Sunday                               |
| 2    | Day 7  | LED & photodiode                     |
|      | Day 8  | Solar Cell                           |
|      | Day 9  | Half Wave Rectifier                  |
|      | Day 10 | Full Wave Rectifier                  |
|      | Day 11 | Types of Filter Circuits             |
|      | Day 12 | Practical                            |
|      |        | Sunday                               |
| 3    | Day 13 | Types of Filter Circuits             |
|      | Day 14 | Zener Diode as Voltage Regulator     |
|      | Day 15 | Simple Regulated Power Supply        |
|      | Day 16 | Junction Transistor                  |
|      | Day 17 | Bipolar Transistor-1                 |
|      | Day 18 | Practical                            |
|      |        | Sunday                               |
| 4    |        | <u>Vasant Panchami</u>               |
|      | Day 19 | Transistor-2                         |
|      |        | <u>Sir Chhotu Ram Jayanti</u>        |
|      | Day 20 | Transistor-3                         |
|      |        | <u>Republic Day</u>                  |
|      | Day 21 | Practical                            |
|      |        | Sunday                               |
| 5    | Day 22 | Transistor in C-B                    |
|      | Day 23 | Transistor in C-E                    |
|      | Day 24 | Transistor in C-C                    |

|       |        |   |
|-------|--------|---|
| 1-Feb | Day 25 | Advantage of CB Configuration                 |
|       | Day 26 | CRO-1   |
|       | Day 27 | Practical                                     |
|       |        | Sunday  |
| 2     | Day 28 | Transistor Biasing                            |
|       | Day 29 | Methods of Transistor Biasing & Stabilisation |
|       | Day 30 | D.C Load line                                 |
|       | Day 31 | Common Base Transistor                        |
|       | Day 32 | Common Emitter Transistor                     |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u>       |
|       |        | Sunday  |
| 3     | Day 33 | Common Base Amplifier                         |
|       |        | <u>MahaShivratri</u>                          |
|       | Day 34 | Common Emitter Transistor                     |
|       | Day 35 | Classification of Amplifier                   |
|       | Day 36 | R-C coupled Amplifier                         |
|       | Day 37 | Practical                                     |
|       |        | Sunday  |
| 4     | Day 38 | Feedback in Amplifier                         |
|       | Day 39 | Advantage of Negative Feedback                |
|       | Day 40 | Emitter Follower                              |
|       | Day 41 | Oscillator                                    |
|       | Day 42 | Classification of Oscillator                  |
|       | Day 43 | Practical                                     |
|       |        | Sunday  |
| 5     | Day 44 | Condition for salt Sustained oscillaton       |
|       | Day 45 | Hartleyt oscillator                           |
|       | Day 46 | Test-1  |

|       |        |   |
|-------|--------|---|
| 1-Mar |        | <u>Guru Ravidas Birthday</u>                                |
|       |        | <u>Holi</u>   |
|       | Day 47 | Test-2 (Practical)  |
|       |        | Sunday  |
| 2     | Day 48 | Seminar (Student Representation)                            |
|       | Day 49 | Presentation  |
|       | Day 50 | Main Features of Laser                                      |
|       | Day 51 | Direction ability, Intensity                                |
|       | Day 52 | High degree of coherence                                    |
|       | Day 53 | Spacial & Temporal Coherence (Practical)                    |
|       |        | Sunday  |
| 3     | Day 54 | Einstein's Coefficient                                      |
|       | Day 55 | Amplification   |
|       | Day 56 | Momentum Transfer   |
|       | Day 57 | Life time of a level  |
|       | Day 58 | Kinetics of optical absorption                              |
|       | Day 59 | Threshold condition for Laser Emission (Practical)          |
|       |        | Sunday  |
| 4     | Day 60 | Laser Pumping   |
|       | Day 61 | He-Ne Laser   |
|       | Day 62 | RUBY Laser-1  |
|       | Day 63 | RUBY Laser-2  |
|       |        | <u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|       | Day 64 | Practical   |
|       |        | <u>Sunday/ Ram Navami</u>                                   |
| 5     | Day 65 | Application of Laser  |
|       | Day 66 |   |
|       | Day 67 |   |
|       |        | <u>MahavirJayanti</u>                                       |
|       | Day 68 |   |
|       | Day 69 | Practical   |

|       |        |   |
|-------|--------|---|
| 1-Apr |        | Sunday  |
|       | Day 70 | Revision                                      |
|       | Day 71 | Revision                                      |
|       | Day 72 | Test  |
|       | Day 73 | Discussion                                    |
|       | Day 74 | Revision                                      |
|       | Day 75 | Practical                                     |
|       |        | Sunday  |
| 2     | Day 76 | Assignment                                    |
|       | Day 77 | Test  |
|       | Day 78 | Discussion                                    |
|       | Day 79 | Revision                                      |
|       | Day 80 | Assignment                                    |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a> |
|       |        | Sunday  |
| 3     | Day 81 | Test  |
|       | Day 82 | Discussion                                    |
|       |        | <a href="#">ParashuramaJayanti</a>            |
|       | Day 83 | Revision                                      |
|       | Day 84 | Presentation                                  |
|       | Day 85 | Practical                                     |
|       |        | Sunday  |
| 4     | Day 86 | Assignment                                    |
|       | Day 87 | Discussion                                    |
|       | Day 88 | Test  |
|       | Day 89 | Revision                                      |
|       | Day 90 | Revision                                      |
|       | Day 91 | Practical                                     |

Lesson Plan

Name of the Assistant/ Associate Professor-Mr.Somveer.....

Class and Section:.....HC4 & HM4

Subject:Physics Optional.....

| Week |        | Topics                                      |
|------|--------|---|
| 1    | Day 1  | Introduction                                |
|      | Day 2  | Statistical Mechanics :Probability          |
|      | Day 3  | Some Probability consideration              |
|      | Day 4  | Combination Possessing Maximum Probability  |
|      | Day 5  | Combination Possessing Minimum Probability  |
|      |        |   |
|      |        | Sunday                                      |
| 2    | Day 6  | Problem Discussion                          |
|      | Day 7  | Distribution of Molecules in Two Boxes      |
|      | Day 8  | Case with Weightage(General)                |
|      | Day 9  | Phase Space, Microstate and Macrostate      |
|      | Day 10 | Statistical Fluctuations constraints        |
|      |        | Sunday                                      |
| 3    | Day 11 | accessible states                           |
|      | Day 12 | thermodynamical probability                 |
|      | Day 13 | Problem Discussion                          |
|      | Day 14 | postulates of statistical Physics           |
|      | Day 15 | division of phase space into cells          |
|      |        | Sunday                                      |
| 4    |        | <u>VasantPanchami</u>                       |
|      | Day 16 | condition of equilibrium between two system |
|      |        | <u>Sir Chhotu Ram Jayanti</u>               |
|      | Day 17 | entropy and probablity                      |
|      |        | <u>Republic Day</u>                         |
|      | Sunday |   |
| 5    | Day 18 | Boltz mann law                              |
|      | Day 19 | B.E. statistics                             |
|      | Day 20 | Problem Discussion                          |

|       |        |   |
|-------|--------|---|
| 1-Feb | Day 21 | derivation of Planck's-Radiation law    |
|       | Day 22 | B.E. Gas                                |
|       |        | Sunday                                  |
| 2     | Day 23 | class test                              |
|       | Day 24 | discussion of test problem              |
|       | Day 25 | introduction of quantum mechanics       |
|       | Day 26 | quantum mechanics                       |
|       | Day 27 | Failure of classical mechanics          |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u> |
|       | Sunday |   |
| 3     | Day 28 | old quantum theory                      |
|       |        | <u>MahaShivratri</u>                    |
|       | Day 29 | photoelectric effect                    |
|       | Day 30 | einstein photoelectric effect equation  |
|       | Day 31 | einstein photoelectric effect equation  |
|       |        | Sunday                                  |
| 4     | Day 32 | Compton effect                          |
|       | Day 33 | result of Compton effect                |
|       | Day 34 | Davision Heisenberg's                   |
|       | Day 35 | G.P. Thomsan Experiment                 |
|       | Day 36 | Phase & Group velocity                  |
|       |        | Sunday                                  |
| 5     | Day 37 | Problem Discussion                      |
|       | Day 38 | Heisenberg's uncertainty principle      |
|       | Day 39 | Time Energy and angular momentum        |

|       |        |  |
|-------|--------|--|
| 1-Mar |        | Guru Ravidas Birthday                                  |
|       |        | Holi   |
|       |        |  |
|       |        | Sunday   |
| 2     | Day 40 | Position Uncertainty                                   |
|       | Day 41 | Uncertainty Principle from De-broglie                  |
|       | Day 42 | Duality Nature   |
|       | Day 43 | Problem Discussion                                     |
|       | Day 44 | Problem Discussion                                     |
|       |        |  |
|       |        | Sunday   |
| 3     | Day 45 | Gama Ray Microscope                                    |
|       | Day 46 | Electron Diffraction From a Slit                       |
|       | Day 47 | Derivation of Time dependent Schrodinger wave Equation |
|       | Day 48 | Derivation of Time dependent Schrodinger wave Equation |
|       | Day 49 | Numerical on Schrodinger wave                          |
|       |        |  |
|       |        | Sunday   |
| 4     | Day 50 | Numerical on Schrodinger wave                          |
|       | Day 51 | Problem Discussion                                     |
|       | Day 52 | Unit Test  |
|       | Day 53 | Problem Discussion of Unit Test                        |
|       |        | ShaheediDiwas of Bhagat Singh, Rajguru & Sukhdev       |
|       |        |  |
|       |        | Sunday/ Ram Navami                                     |
| 5     | Day 54 | Introduction of computer programming                   |
|       | Day 55 | Computer Programming                                   |
|       | Day 56 | Computer Organisation                                  |
|       |        | MahavirJayanti   |
|       | Day 57 | Binary Representation                                  |
|       |        |  |

|       |        |   |
|-------|--------|---|
| 1-Apr |        | Sunday  |
|       | Day 58 | Algorithm Development                         |
|       | Day 59 | Flow Chart & their Interpretation             |
|       | Day 60 | Fortran Preliminaries                         |
|       | Day 61 | Integer & Floating Points                     |
|       | Day 62 | Arithmetic Expression                         |
|       |        |   |
|       |        | Sunday  |
| 2     | Day 63 | Executable & Non-Executable Statements        |
|       | Day 64 | Input & Output Statements                     |
|       | Day 65 | Formats                                       |
|       | Day 66 | I.F. DO and GO TO Statements                  |
|       | Day 67 | Dimesion Arrays                               |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a> |
|       |        | Sunday  |
| 3     | Day 68 | Statement function                            |
|       | Day 69 | Function Subprogram                           |
|       |        | <a href="#">ParashuramaJayanti</a>            |
|       | Day 70 | Problem Discussion                            |
|       | Day 71 | Unit Test                                     |
|       |        | Sunday  |
| 4     | Day 72 | Problem Discussion of Unit Test               |
|       | Day 73 | Revision of Statistical Mechanics             |
|       | Day 74 | Revision of Statistical Mechanics             |
|       | Day 75 | Revision of Quantum Mechanics                 |
|       | Day 76 | Revision of Quantum Mechanics                 |
|       |        |   |

## Lesson Plan

Name of the Assistant/ Associate Professor - Manjeet **Suhag**

Class and Section: **HP2**

Subject: **LDIC-II**

| Week | Date      | Topics                                |
|------|-----------|---------------------------------------|
| 1    | Day1      | Introduction About Syllabus           |
|      | Day2      | Sequential Circuit: Flip-Flop         |
|      | Day3      | Types of Flip-Flop                    |
|      | Day4      | SR Flip-Flop                          |
|      |           |                                       |
|      |           |                                       |
|      | 7-Jan-18  | Sunday                                |
| 2    | Day5      | Clocked SR flip-Flop                  |
|      | Day6      | Preset and Clear SR Flip-Flop         |
|      | Day7      | JK Flip-Flop                          |
|      | Day8      | Clocked JK Flip-Flop                  |
|      |           |                                       |
|      |           |                                       |
|      | 14-Jan-18 | Sunday                                |
| 3    | Day9      | Preset and Clear JK Flip-Flop         |
|      | Day10     | Race around condition in JK Flip Flop |
|      | Day11     | Master Slave JK Flip Flop             |
|      | Day12     | Continue.....                         |
|      |           |                                       |
|      |           |                                       |
|      | 21-Jan-18 | Sunday                                |
| 4    | 22-Jan-18 | Vasant Panchami                       |
|      | Day13     | D flip Flop                           |
|      | 24-Jan-18 | Sir Chhotu Ram Jayanti                |
|      | Day14     | T Flip Flop                           |
|      | 26-Jan-18 | Republic Day                          |
|      |           |                                       |
|      | 28-Jan-18 | Sunday                                |
| 5    | Day15     | Revision of Flip Flop                 |
|      | Day16     | Introduction about Registers          |
|      | Day17     | Types of Registers                    |

## Lesson Plan

Name of the Assistant/ Associate Professor - Manjeet **Suhag**

Class and Section: **HP2**

Subject: **LDIC-II**

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day18     | SISO Register  |
|      |           |  |
|      |           |  |
|      | 4-Feb-18  | Sunday   |
| 2    | Day19     | SIPO Register  |
|      | Day20     | PIPO Register  |
|      | Day21     | PISO Register  |
|      | Day22     | Revision Of Registers  |
|      |           |  |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti                              |
|      | 11-Feb-18 | Sunday   |
| 3    | Day23     | Class Test   |
|      |           |  |
|      | 13-Feb-18 | Maha Shivratri   |
|      | Day24     | Introduction About Counters: Asynchronous Counter                |
|      | Day25     | Synchronous Counter  |
|      | Day26     | Decade Counter   |
|      |           |  |
|      | Sunday    |  |
|      | 18-Feb-18 |  |
| 4    | Day27     | Revision Of Counters   |
|      | Day28     | Introduction about Conversion:<br>Types of Conversion: D/A & A/D |
|      | Day29     | Types Of D To A Converter  |
|      | Day30     | Continue.....  |
|      |           |  |
|      |           |  |
|      |           | Sunday   |
|      | 25-Feb-18 |  |
| 5    | Day31     | Continue.....  |
|      | Day32     | Continue.....  |
|      | Day33     | Types Of A To D Converter  |

Name of the Assistant/ Associate Professor - Manjeet **Suhag**

Class and Section: **HP2**

Subject: **LDIC-II**

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | 1-Mar-18  | Guru Ravidas Birthday   |
|      | 2-Mar-18  | Holi  |
|      |           |   |
|      | 4-Mar-18  | Sunday  |
| 2    | Day34     | A/D Converter Continue.....   |
|      | Day35     | Continue.....   |
|      | Day36     | Revision Of Converters  |
|      | Day37     | Introduction About Power Supply: Requirement of Ideal Voltage and Current Source, Voltage Source                          |
|      |           |   |
|      |           |   |
|      | 11-Mar-18 | Sunday  |
| 3    | Day38     | Introduction About Rectifiers & Types Of Rectifiers: Half-Wave Rectifiers   |
|      | Day39     | Full-Wave Rectifier & Bridge Rectifier.   |
|      | Day40     | Revision About Rectifiers   |
|      | Day41     | Introduction About Filters: L Filter & C filters.   |
|      |           |   |
|      |           |   |
|      | 18-Mar-18 | Sunday  |
| 4    | Day42     | Some Idea of Ripple. Revision About Filters.  |
|      | Day43     | Class Test  |
|      | Day44     | Oscilloscope: Input attenuators, DC, AC and ground, horizontal and vertical deflecting system.                            |
|      | Day45     | Time base generation and synchronization: measurement of positive, positive-negative wave shape, rise time and fall time. |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev   |
|      |           |   |
|      | 25-Mar-18 | Sunday/ Ram Navami  |
| 5    | Day46     | Frequency, amplitude and phase of sinusoidal waves.   |
|      | Day47     | Revision of Oscilloscope  |
|      | Day48     | Introduction About IC 555   |
|      | 29-Mar-18 | Mahavir Jayanti   |
|      | Day49     | Continue.....   |
|      |           |   |

Name of the Assistant/ Associate Professor - Manjeet **Suhag**

Class and Section: **HP2**

Subject: **LDIC-II**

| Week | Date      | Topics                         |
|------|-----------|--------------------------------|
| 1    | 1-Apr-18  | Sunday                         |
|      | Day50     | Continue.....                  |
|      | Day51     | Continue.....                  |
|      | Day52     | Continue.....                  |
|      | Day53     | Continue.....                  |
|      |           |                                |
|      |           |                                |
|      | 8-Apr-18  | Sunday                         |
| 2    | Day54     |                                |
|      | Day55     |                                |
|      | Day56     |                                |
|      | Day57     |                                |
|      |           |                                |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi |
|      | 15-Apr-18 | Sunday                         |
| 3    | Day58     |                                |
|      | Day59     |                                |
|      | 18-Apr-18 | Parashurama Jayanti            |
|      | Day60     |                                |
|      |           |                                |
|      | 22-Apr-18 | Sunday                         |
| 4    | Day61     |                                |
|      | Day62     |                                |
|      | Day63     |                                |
|      | Day64     |                                |
|      |           |                                |
|      |           |                                |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: HP2

Subject: MAGNETISM

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day1      | Introductiuon                                      |
|      | Day2      | Relation about electrostate and magnetostate       |
|      | Day3      | Magnetic force                                     |
|      | Day4      | Properties of B                                    |
|      |           |  |
|      |           |  |
|      | 7-Jan-18  | Sunday   |
| 2    | Day5      | Ampere circular law                                |
|      | Day6      | Curl of B  |
|      | Day7      | Divergence of B                                    |
|      | Day8      | Verctor potential                                  |
|      |           |  |
|      |           |  |
|      | 14-Jan-18 | Sunday   |
| 3    | Day9      | Magnetic flux                                      |
|      | Day10     | Numeric problem                                    |
|      | Day11     | Calculation of B for circular and solenoid current |
|      | Day12     | Numeric problem & assignment 1                     |
|      |           |  |
|      |           |  |
|      | 21-Jan-18 | Sunday   |
| 4    | 22-Jan-18 | Vasant Panchami                                    |
|      | Day13     | Torque on a loop (in unioform magnetic field)      |
|      | 24-Jan-18 | Sir Chhotu Ram Jayanti                             |
|      | Day14     | Torque on a loop (in non unioform magnetic field)  |
|      | 26-Jan-18 | Republic Day                                       |
|      |           |  |
|      | 28-Jan-18 | Sunday   |
| 5    | Day15     | Force on an isolated charge and numeric problem    |
|      | Day16     | B, H & their relation                              |
|      | Day17     | Magnetic susceptibility                            |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: HP2

Subject: MAGNETISM

| Week | Date      | Topics                                     |
|------|-----------|--|
| 1    | Day18     | Stored magnetic energy in matter           |
|      |           |  |
|      |           |  |
|      | 4-Feb-18  | Sunday                                     |
| 2    | Day19     | B-H curve                                  |
|      | Day20     | Energy loss                                |
|      | Day21     | Numeric problems & assignment 2            |
|      | Day22     | Numeric problems                           |
|      |           |  |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti        |
|      | 11-Feb-18 | Sunday                                     |
| 3    | Day23     | Doubts of unit -1                          |
|      | 13-Feb-18 | Maha Shivratri                             |
|      | Day24     | Doubts of unit -1 & numeric problems       |
|      | Day25     | Motional emf                               |
|      | Day26     | Rod moving in uniform magnetic field       |
|      |           |  |
|      | 18-Feb-18 | Sunday                                     |
| 4    | Day27     | A loop through uniform magnetic field      |
|      | Day28     | A stationary loop with field source moving |
|      | Day29     | Numeric problem & assignment 3             |
|      | Day30     | Faraday law of electromagnetic induction   |
|      |           |  |
|      |           |  |
|      | 25-Feb-18 | Sunday                                     |
| 5    | Day31     | Numeric problems                           |
|      | Day32     | Curl of E & physical meaning               |
|      | Day33     | Self induction                             |

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: HP2

Subject: MAGNETISM

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | 1-Mar-18  | Guru Ravidas Birthday                             |
|      | 2-Mar-18  | Holi  |
|      |           |   |
|      | 4-Mar-18  | Sunday  |
| 2    | Day34     | Mutual inducton                                   |
|      | Day35     | Reciprocity theorem & conceptual problem          |
|      | Day36     | Conceptual and numeric problem                    |
|      | Day37     | Numerical problem & assignment 4                  |
|      |           |   |
|      |           |   |
|      | 11-Mar-18 | Sunday  |
| 3    | Day38     | Doubts  |
|      | Day39     | Energy stored in magnetic field                   |
|      | Day40     | Doubts  |
|      | Day41     | Numeric problems (syllabus complete)              |
|      |           |   |
|      |           |   |
|      | 18-Mar-18 | Sunday  |
| 4    | Day42     |   |
|      | Day43     |   |
|      | Day44     |   |
|      | Day45     |   |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev |
|      |           |   |
|      | 25-Mar-18 | Sunday/ Ram Navami                                |
| 5    | Day46     |   |
|      | Day47     |   |
|      | Day48     |   |
|      | 29-Mar-18 | Mahavir Jayanti                                   |
|      | Day49     |   |
|      |           |   |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURAJ KUMAR

Class and Section: HP2

Subject: MAGNETISM

| Week | Date      | Topics                         |
|------|-----------|--------------------------------|
| 1    | 1-Apr-18  | Sunday                         |
|      | Day50     |                                |
|      | Day51     |                                |
|      | Day52     |                                |
|      | Day53     |                                |
|      |           |                                |
|      |           |                                |
|      | 8-Apr-18  | Sunday                         |
| 2    | Day54     |                                |
|      | Day55     |                                |
|      | Day56     |                                |
|      | Day57     |                                |
|      |           |                                |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi |
|      | 15-Apr-18 | Sunday                         |
| 3    | Day58     |                                |
|      | Day59     |                                |
|      | 18-Apr-18 | Parashurama Jayanti            |
|      | Day60     |                                |
|      |           |                                |
|      |           |                                |
|      | 22-Apr-18 | Sunday                         |
| 4    | Day61     |                                |
|      | Day62     |                                |
|      | Day63     |                                |
|      | Day64     |                                |
|      |           |                                |
|      |           |                                |



## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **HP4**

Subject: **THERMAL PHYSICS II**

| Week | Date      | Topics                              |
|------|-----------|-------------------------------------|
| 1    | Day1      | Introduction                        |
|      | Day2      | Temperature and Heat energy         |
|      | Day3      | Zeroth law of thermodynamics        |
|      | Day4      | First law of thermodynamics         |
|      | Day5      | Physical significance of first law  |
|      |           |                                     |
|      | 7-Jan-18  | <b>Sunday</b>                       |
| 2    | Day6      | System and its types                |
|      | Day7      | Various basic processes             |
|      | Day8      | Reversible and irreversible process |
|      | Day9      | Some basic laws of thermodynamics   |
|      | Day10     | Conversion of heat into work        |
|      |           |                                     |
|      | 14-Jan-18 | <b>Sunday</b>                       |
| 3    | Day11     | Carnot theorem                      |
|      | Day12     | Second law of thermodynamics        |
|      | Day13     | Thermodynamic temperature           |
|      | Day14     | Classius inequality                 |
|      | Day15     | Entropy and changes in processes    |
|      |           |                                     |
|      | 21-Jan-18 | <b>Sunday</b>                       |
| 4    | 22-Jan-18 | <b>Vasant Panchami</b>              |
|      | Day16     | Temperature entropy diagram         |
|      | 24-Jan-18 | <b>Sir Chhotu Ram Jayanti</b>       |
|      | Day17     | Principle of entropy                |
|      | 26-Jan-18 | <b>Republic Day</b>                 |
|      |           |                                     |
|      | 28-Jan-18 | <b>Sunday</b>                       |
| 5    | Day18     | Third law of thermodynamics         |
|      | Day19     | Applications of third law           |
|      | Day20     | Revision of first unit              |

## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **HP4**

Subject: **THERMAL PHYSICS II**

| Week      | Date          | Topics                                     |
|-----------|---------------|--|
| 1         | Day21         | Previous year question papers              |
|           | Day22         | Revision                                   |
|           | Day23         | Doubts                                     |
|           | 4-Feb-18      | <b>Sunday</b>                              |
| 2         | Day24         | Class test                                 |
|           | Day25         | Numericals of first unit                   |
|           | Day26         | Thermodynamics potentials                  |
|           | Day27         | Significance of thermodynamic potentials   |
|           | Day28         | Maxwell relations                          |
|           | 10-Feb-18     | <b>Maharshi Dayanand Saraswati Jayanti</b> |
| 11-Feb-18 | <b>Sunday</b> |  |
| 3         | Day29         | Enthalpy and significance                  |
|           | 13-Feb-18     | <b>Maha Shivratri</b>                      |
|           | Day30         | Gibbs function and relation                |
|           | Day31         | Helmholtz free energy                      |
|           | Day32         | Internal energy function                   |
|           | 18-Feb-18     | <b>Sunday</b>                              |
| 4         | Day33         | Maxwell relations                          |
|           | Day34         | Applications of Maxwell relations          |
|           | Day35         | Magnetic work                              |
|           | Day36         | Magnetic cooling                           |
|           | Day37         | Magnetic vaporization                      |
|           | 25-Feb-18     | <b>Sunday</b>                              |
| 5         | Day38         | Adiabatic demagnetization                  |
|           | Day39         | Adiabatic cooling                          |
|           | Day40         | Adiabatic desorption                       |

## Lesson Plan

Name of the Assistant/ Associate Professor - **Sumit Mittal**

Class and Section: **HP4**

Subject: **THERMAL PHYSICS II**

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | <b>Guru Ravidas Birthday</b>                                 |
|      | 2-Mar-18  | <b>Holi</b>  |
|      |           |  |
|      | 4-Mar-18  | <b>Sunday</b>  |
| 2    | Day41     | Absolute zero temperature                                    |
|      | Day42     | Approach to absolute zero                                    |
|      | Day43     | Change of phase  |
|      | Day44     | Phase transitions  |
|      | Day45     | Kelvin thermodynamic scale                                   |
|      |           |  |
|      | 11-Mar-18 | <b>Sunday</b>  |
| 3    | Day46     | Equilibrium between liquid and vapour                        |
|      | Day47     | Clausius claperyon equation                                  |
|      | Day48     | Application of Clausius claperyon equation                   |
|      | Day49     | Triple point   |
|      | Day50     | Examples of Triple point                                     |
|      |           |  |
|      | 18-Mar-18 | <b>Sunday</b>  |
| 4    | Day51     | Phase transition   |
|      | Day52     | First order phase transition                                 |
|      | Day53     | Second order phase transition                                |
|      | Day54     | Revision   |
|      | 23-Mar-18 | <b>Shaheedi Diwas of Bhagat Singh, Rajguru &amp; Sukhdev</b> |
|      |           |  |
|      | 25-Mar-18 | <b>Sunday/ Ram Navami</b>                                    |
| 5    | Day55     | Previous year questions                                      |
|      | Day56     | Doubts   |
|      | Day57     | Numericals on second unit                                    |
|      | 29-Mar-18 | <b>Mahavir Jayanti</b>                                       |
|      | Day58     | Class test   |

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Jitendra Gangwar

Class and Section: B. Sc. (Hons.) Physics (semester VI, HP6)

Subject: Nano Technology (Phy - 606 (a))

| Week |        | Topics  |
|------|--------|---|
| 1    | Day 1  | <b>Unit: I</b> Basic Introduction to Nanomaterials          |
|      | Day 2  | Properties and Applications of nanomaterials                |
|      | Day 3  | Classification of Nanomaterials                             |
|      | Day 4  | Definitation of Particle size                               |
|      | Day 5  | <i>Demonstration on above topics by initial 05 students</i> |
|      |        |   |
|      |        | Sunday  |
| 2    | Day 6  | Definitation of Crystallite size                            |
|      | Day 7  | Difference between particle size and crystallite size       |
|      | Day 8  | Different techniques used to determine particle size        |
|      | Day 9  | Procedure to determine the particle size                    |
|      | Day 10 | <i>Demonstration on above topics by next 05 students</i>    |
|      |        |   |
|      |        | Sunday  |
| 3    | Day 11 | XRD technique   |
|      | Day 12 | Increase in width of XRD peaks of Nanoparticles             |
|      | Day 13 | Increase in width of XRD peaks of Nanoparticles             |
|      | Day 14 | <i>Revivion of all above taught topics</i>                  |
|      | Day 15 | <i>Demonstration on above topics by next 05 students</i>    |
|      |        |   |
|      |        | Sunday  |
| 4    |        | <u>VasantPanchami</u>                                       |
|      | Day 16 | Photoluminescence (PL): An Introduction                     |
|      |        | <u>Sir Chhotu Ram Jayanti</u>                               |
|      | Day 17 | PL spectra of various Nanomaterials                         |
|      |        | <u>Republic Day</u>   |
|      | Day 18 | PL spectra of various Nanomaterials                         |
|      |        | Sunday  |
| 5    | Day 19 | Observation of PL peaks                                     |
|      | Day 20 | Onservation of PL peaks                                     |
|      | Day 21 | techniques used to observe the PL peaks                     |

|       |        |   |
|-------|--------|---|
| 1-Feb | Day 22 | techniques used to observe the PL peaks                         |
|       | Day 23 | <i>Demonstration on above topics by next 05 students</i>        |
|       |        |   |
|       |        | Sunday  |
| 2     | Day 24 | Shift in PL peaks   |
|       | Day 25 | Shift in PL peaks   |
|       | Day 26 | Red Shift and Blue shift in PL peaks                            |
|       | Day 27 | Red Shift and Blue shift in PL peaks                            |
|       | Day 28 | <b><i>Half Unit test: Unit 01 (on above taught topics)</i></b>  |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u>                         |
|       |        | Sunday  |
| 3     | Day 29 | Raman spectra: An Introduction                                  |
|       |        | <u>MahaShivratri</u>  |
|       | Day 30 | Raman spectra in bulk- and Nano-materials                       |
|       | Day 31 | Properties and Applications of Raman Spectra                    |
|       | Day 32 | <i>Demonstration on above topics by next 05 students</i>        |
|       |        |   |
|       |        | Sunday  |
| 4     | Day 33 | Variation of Raman spectra of Nanomaterials                     |
|       | Day 34 | Variation of Raman spectra of Nanomaterials                     |
|       | Day 35 | Numericals based on XRD peaks                                   |
|       | Day 36 | Numericals based on XRD peaks                                   |
|       | Day 37 | Numericals based on particle size determination                 |
|       |        |   |
|       |        | Sunday  |
| 5     | Day 38 | Numericals based on particles size determination                |
|       | Day 39 | <i>Problems Discussion</i>                                      |
|       | Day 40 | <b><i>Demonstration on above topics by next 05 students</i></b> |

|       |        |   |
|-------|--------|---|
| 1-Mar |        | <u>Guru Ravidas Birthday</u>                                |
|       |        | <u>Holi</u>   |
|       |        |   |
|       |        | Sunday  |
| 2     | Day 41 | Last year paper solution of Unit: I (2017)                  |
|       | Day 42 | Last year paper solution of Unit: I (2016)                  |
|       | Day 43 | Summarize Unit I  |
|       | Day 44 | <b><i>Completion of Unit I (Unit Test: 01)</i></b>          |
|       | Day 45 | <i>Demonstration on above topics by next 05 students</i>    |
|       |        |   |
|       |        | Sunday  |
| 3     | Day 46 | <b>Unit: I</b> Classification of Nanomaterials              |
|       | Day 47 | Facile synthesis of nanomaterials                           |
|       | Day 48 | Mechanism for the synthesis of Nanomaterials                |
|       | Day 49 | Different types for the synthesis of Nanomaterials          |
|       | Day 50 | <i>Demonstration on above topics by next 05 students</i>    |
|       |        |   |
|       |        | Sunday  |
| 4     | Day 51 | Bottom-up and Top-down approaches                           |
|       | Day 52 | Bottom-up approaches: Cluster Beam evaporation              |
|       | Day 53 | Bottom-up approaches: Cluster Beam evaporation              |
|       | Day 54 | Chemical Bath Deposition (CBD)                              |
|       |        | <u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|       |        |   |
|       |        | <u>Sunday/ Ram Navami</u>                                   |
| 5     | Day 55 | CBD with Capping techniques                                 |
|       | Day 56 | CBD with Capping techniques                                 |
|       | Day 57 | Revision of all Bottom-up methods                           |
|       |        | <u>MahavirJayanti</u>                                       |
|       | Day 58 | <i>Unit test: Half II unit test</i>                         |
|       |        |   |

|       |        |  |
|-------|--------|--|
| 1-Apr |        | Sunday   |
|       | Day 59 | Top-down approaches                                      |
|       | Day 60 | Difference between Bottom-up and Top-down approaches     |
|       | Day 61 | Different types of Top-down methods                      |
|       | Day 62 | Different types of Top-down methods                      |
|       | Day 63 | <i>Demonstration on above topics by next 05 students</i> |
|       |        |  |
|       |        | Sunday   |
| 2     | Day 64 | Ball-Milling   |
|       | Day 65 | Ball-Milling   |
|       | Day 66 | <i>Problems Discussion</i>                               |
|       | Day 67 | <i>Problems Discussion</i>                               |
|       | Day 68 | <b>SESSIONAL TEST: 02 (Unit: II)</b>                     |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a>            |
|       |        | Sunday   |
| 3     | Day 69 | Last year paper solution: Unit II (2017)                 |
|       | Day 70 | Last year paper solution: Unit II (2017)                 |
|       |        | <a href="#">ParashuramaJayanti</a>                       |
|       | Day 71 | Last year paper solution: Unit II (2016)                 |
|       | Day 72 | <i>Demonstration on above topics by next 05 students</i> |
|       |        |  |
|       |        | Sunday   |
| 4     | Day 73 | Revision of FIRST Unit                                   |
|       | Day 74 | Revision of FIRST Unit                                   |
|       | Day 75 | Revision of SECOND Unit                                  |
|       | Day 76 | Revision of SECOND Unit                                  |
|       | Day 77 | <b>COURSE COMPLETED</b>                                  |

Lesson Plan

Name of the Assistant/ Associate Professor-Mr.Somveer.....

Class and Section:Hons.Physics 6th Sem.....

Subject:STATISTICAL PHYSICS.....

| Week |        | Topics   |
|------|--------|--|
| 1    | Day 1  | INTRODUCTION   |
|      | Day 2  | Introduction of Bose Einstein Statistics                 |
|      | Day 3  | B.E. distribution law                                    |
|      | Day 4  | Thermodynamic functions of an ideal weakly degenrate gas |
|      | Day 5  | Thermodynamic functions of an ideal weakly degenrate gas |
|      | Day 6  |  |
|      |        | Sunday   |
| 2    | Day 7  | Problem Discussion                                       |
|      | Day 8  | Bose-Einstein condensation properties of liquid He.      |
|      | Day 9  | Numerical of above topic                                 |
|      | Day 10 | Planck' law Derivation                                   |
|      | Day 11 | Thermodynamic function of Photon gas                     |
|      | Day 12 | Practical  |
|      |        | Sunday   |
| 3    | Day 13 | Numerical Approach of above Topic                        |
|      | Day 14 | Specific Heat of Hydrogen                                |
|      | Day 15 | Quantization of Rotational & Vibrational Motion          |
|      | Day 16 | Ortho and Para hydrogen                                  |
|      | Day 17 | Numerical Approach of Above                              |
|      | Day 18 | Any Topic repeated                                       |
|      |        | Sunday   |
| 4    |        | <u>VasantPanchami</u>                                    |
|      | Day 19 | Repeation of above for any Problem                       |
|      |        | <u>Sir Chhotu Ram Jayanti</u>                            |
|      | Day 20 | Test of Unit-I   |
|      |        | <u>Republic Day</u>                                      |
|      | Day 21 | Seminar Representation by Student                        |
|      |        | Sunday   |
| 5    | Day 22 | Fermi-Dirac Distribution Law                             |
|      | Day 23 | Fermi-Energy   |
|      | Day 24 | Thermodynamic function of an Ideal weakly Gas            |

|       |        |  |
|-------|--------|--|
| 1-Feb | Day 25 | Weakly degenerate Fermi-Gas                |
|       | Day 26 | Strongly degenerate Fermi-Gas              |
|       | Day 27 | Problems of Above Topics (Practical)       |
|       |        | Sunday                                     |
| 2     | Day 28 | Electron Gas in a Metal                    |
|       | Day 29 | Specific heat of Metals                    |
|       | Day 30 | Richardson equation of thermionic emission |
|       | Day 31 | Problems of above topic (Numerical Type)   |
|       | Day 32 | Third Law of thermodynamics                |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u>    |
|       |        | Sunday                                     |
| 3     | Day 33 | Application of third law & thermodynamics  |
|       |        | <u>MahaShivratri</u>                       |
|       | Day 34 | Entropy & its definition                   |
|       | Day 35 | Absolute definition of entropy             |
|       | Day 36 | Problems & Above topic                     |
|       | Day 37 | Practical                                  |
|       |        | Sunday                                     |
| 4     | Day 38 | Consequence & third law                    |
|       | Day 39 | Unattainability of Absolute Law            |
|       | Day 40 | Remaining Problems of topic Above          |
|       | Day 41 | Test-II                                    |
|       | Day 42 | Seminar representation                     |
|       | Day 43 | Practical                                  |
|       |        | Sunday                                     |
| 5     | Day 44 | Seminar Allotement                         |
|       | Day 45 | Revision                                   |
|       | Day 46 | Discussion                                 |

|       |        |   |
|-------|--------|---|
| 1-Mar |        | <u>Guru Ravidas Birthday</u>                                |
|       |        | <u>Holi</u>   |
|       | Day 47 | Revision  |
|       |        | Sunday  |
| 2     | Day 48 | Revision  |
|       | Day 49 | Revision  |
|       | Day 50 | Revision  |
|       | Day 51 | Revision  |
|       | Day 52 | Revision  |
|       | Day 53 |   |
|       |        | Sunday  |
| 3     | Day 54 | Test  |
|       | Day 55 | Test Discussion   |
|       | Day 56 | Revision  |
|       | Day 57 | Revision  |
|       | Day 58 | Revision  |
|       | Day 59 |   |
|       |        | Sunday  |
| 4     | Day 60 | Test  |
|       | Day 61 | Test Discussion   |
|       | Day 62 | Revision  |
|       | Day 63 | Revision  |
|       |        | <u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|       | Day 64 |   |
|       |        | <u>Sunday/ Ram Navami</u>                                   |
| 5     | Day 65 | Revision  |
|       | Day 66 | Revision  |
|       | Day 67 | Revision  |
|       |        | <u>MahavirJayanti</u>                                       |
|       | Day 68 | Revision  |
|       | Day 69 |   |

|       |        |   |
|-------|--------|---|
| 1-Apr |        | Sunday  |
|       | Day 70 | Test  |
|       | Day 71 | Test Discussion                               |
|       | Day 72 | Numerical Problem                             |
|       | Day 73 | Numerical Problem                             |
|       | Day 74 | Numerical Problem                             |
|       | Day 75 |   |
|       |        | Sunday  |
| 2     | Day 76 | Test  |
|       | Day 77 | Test Discussion                               |
|       | Day 78 | Revision                                      |
|       | Day 79 | Revision                                      |
|       | Day 80 | Revision                                      |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a> |
|       |        | Sunday  |
| 3     | Day 81 | Revision                                      |
|       | Day 82 | Revision                                      |
|       |        | <a href="#">ParashuramaJayanti</a>            |
|       | Day 83 | Revision                                      |
|       | Day 84 | Revision                                      |
|       | Day 85 |   |
|       |        | Sunday  |
| 4     | Day 86 | Test  |
|       | Day 87 | Test Problems                                 |
|       | Day 88 | Revision                                      |
|       | Day 89 | Revision                                      |
|       | Day 90 | Revision                                      |
|       | Day 91 |   |

## Lesson Plan

Name of the Assistant/ Associate Professor - Surbhi

Class and Section: B.sc 4<sup>th</sup> Sem. (N.M)

Subject: Statistical Mechanics

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | Day1      | Introduction  |
|      | Day2      | Probability, some probability considerations  |
|      | Day3      | combinations possessing maximum probability   |
|      |           |   |
|      |           |   |
|      | 7-Jan-18  | Sunday  |
| 2    | Day4      | combinations possessing minimum probability,  |
|      | Day5      | distribution of molecules in two boxes.   |
|      | Day6      | Case with weightage (general). Phase space,   |
|      |           |   |
|      |           |   |
|      | 14-Jan-18 | Sunday  |
| 3    | Day7      | microstates and macrostates, statistical fluctuations constraints and accessible States |
|      | Day8      | Thermodynamical probability.  |
|      | Day9      | Numerical problems & assignment 1   |
|      |           |   |
|      |           |   |
|      | 21-Jan-18 | Sunday  |
| 4    | 22-Jan-18 | <u>Vasant Panchami</u>  |
|      | Day10     | doubts  |
|      | 24-Jan-18 | <u>Sir Chhotu Ram Jayanti</u>   |
|      | Day11     | Postulates of Statistical Physics, Division of Phase space into cells                   |
|      | 26-Jan-18 | <u>Republic Day</u>   |
|      |           |   |
|      | 28-Jan-18 | Sunday  |
| 5    | Day12     | Condition of equilibrium between two system in thermal contact                          |
|      | Day13     | b-Parameter ,Entropy  |
|      | Day14     | Boltzman's distribution law   |

## Lesson Plan

Name of the Assistant/ Associate Professor - Surbhi

Class and Section: B.sc 4<sup>th</sup> Sem. (N.M)

Subject: Statistical Mechanics

| Week | Date      | Topics  |
|------|-----------|---|
| 1    |           |   |
|      | 4-Feb-18  | Sunday  |
| 2    | Day15     | Evaluation of A and b.,                                   |
|      | Day16     | Bose-Einstein statistics, assignment 2                    |
|      | Day17     | Application of B.E. Statistics to Plancks's radiation law |
|      |           |   |
|      |           |   |
|      | 10-Feb-18 | <u>Maharshi Dayanand Saraswati Jayanti</u>                |
|      | 11-Feb-18 | Sunday  |
| 3    | Day18     | B.E. gas.   |
|      | 13-Feb-18 | <u>Maha Shivratri</u>                                     |
|      | Day19     | Numerical problems  |
|      |           |   |
|      |           |   |
|      | 18-Feb-18 | Sunday  |
| 4    | Day20     | Doubts & assignment-3                                     |
|      | Day21     | Numerical   |
|      | Day22     | Fermi-Dirac statistics                                    |
|      |           |   |
|      |           |   |
|      | 25-Feb-18 | Sunday  |
| 5    | Day23     | M.B. Law as limiting case of B.E. Degeneracy              |
|      | Day24     | B.E., Condensation  |
|      | Day25     | F.D. Gas  |

### **Lesson Plan**

Name of the Assistant/ Associate Professor - Surbhi

Class and Section: B.sc 4<sup>th</sup> Sem. (N.M)

Subject: Statistical Mechanics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | <u>Guru Ravidas Birthday</u>                                 |
|      | 2-Mar-18  | <u>Holi</u>  |
|      | 4-Mar-18  | Sunday   |
| 2    | Day26     | F.D. Gas   |
|      | Day27     | Numerical problems & assignment 4                            |
|      | Day28     | electron gas in metals                                       |
|      |           |  |
|      |           |  |
|      | 11-Mar-18 | Sunday   |
| 3    | Day29     | Numerical problems   |
|      | Day30     | Zero point energy  |
|      | Day31     | Specific heat of metals and its solution.                    |
|      |           |  |
|      |           |  |
|      | 18-Mar-18 | Sunday   |
| 4    | Day32     | Specific heat of metals and its solution.                    |
|      | Day33     | Doubts   |
|      | Day34     | Doubts   |
|      |           |  |
|      | 23-Mar-18 | <u>Shaheedi Diwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|      | 25-Mar-18 | Sunday/ <u>Ram Navami</u>                                    |
| 5    | Day35     | Numerical problems & assignment 5                            |
|      | Day36     | Syllabus complete  |
|      | Day37     |  |
|      | 29-Mar-18 | <u>Mahavir Jayanti</u>                                       |
|      | Day49     |  |
|      |           |  |

### **Lesson Plan**

### **Lesson Plan**

Name of the Assistant/ Associate Professor - Surbhi

Class and Section: B.sc 4<sup>th</sup> Sem. (N.M)

Subject: Statistical Mechanics

| Week | Date     | Topics |
|------|----------|--------|
| 1    | 1-Apr-18 | Sunday |
|      | Day50    |        |
|      | Day51    |        |

|           |           |  |
|-----------|-----------|--|
|           | Day52     |  |
|           | Day53     |  |
|           |           |  |
|           | 8-Apr-18  | Sunday   |
| 2         | Day54     |  |
|           | Day55     |  |
|           | Day56     |  |
|           | Day57     |  |
|           |           |  |
|           | 14-Apr-18 | <a href="#">Dr Ambedkar Jayanti / Vaisakhi</a> |
| 15-Apr-18 | Sunday    |  |
| 3         | Day58     |  |
|           | Day59     |  |
|           | 18-Apr-18 | <a href="#">Parashurama Jayanti</a>            |
|           | Day60     |  |
|           |           |  |
|           |           |  |
|           | 22-Apr-18 | Sunday   |
|           | Day62     |  |
|           | Day63     |  |
| Day64     |           |  |

Lesson Plan

| Name of the Assistant/ Associate Professor..... |        | Mr. Anil Rana                          |
|---|--------|--|
| Class and Section:.....                         |        | B. Sc (Honours Physics VIth Sem)       |
| Subject:.....                                   |        | Physics of Materials - II              |
| Week  |        | Topics                                 |
| 1   | Day 1  | Basic of dielectric properties         |
|   | Day 2  | of Materials                           |
|   | Day 3  | of Materials                           |
|   | Day 4  | of Materials                           |
|   | Day 5  | Polarization                           |
|   | Day 6  | Polarization                           |
|   |        | Sunday                                 |
| 2   | Day 7  | Local electric field at an atom        |
|   | Day 8  | Local electric field at an atom        |
|   | Day 9  | Depolarization field                   |
|   | Day 10 | Depolarization field                   |
|   | Day 11 | Lorent fird of dipoles                 |
|   | Day 12 | inside a cavity                        |
| 3   | Day 13 | inside a cavity                        |
|   | Day 14 | Dielectric constant and                |
|   | Day 15 | Polarizability                         |
|   | Day 16 | Electric susceptibility                |
|   | Day 17 | Electric susceptibility                |
|   | Day 18 | Clausius Mosotti equation              |
|   |        | Sunday                                 |
| 4   |        | <u>VasantPanchami</u>                  |
|   | Day 19 | Clausius Mosotti equation              |
|   |        | <u>Sir Chhotu Ram Jayanti</u>          |
|   | Day 20 | Qualitative discussion of ferrelectric |
|   |        | <u>Republic Day</u>                    |
|   | Day 21 | Properties of materials                |
|   | Sunday |  |
| 5   | Day 22 | proeprties of materials                |
|   | Day 23 | proeprties of materials                |
|   | Day 24 | P.E. hysteresis loop                   |

|       |        |  |
|-------|--------|--|
| 1-Feb | Day 25 | P.E. hysteresis loop                     |
|       | Day 26 | P.E. hysteresis loop                     |
|       | Day 27 | P.E. hysteresis loop                     |
|       |        | Sunday                                   |
| 2     | Day 28 | Numericals                               |
|       | Day 29 | Numericals                               |
|       | Day 30 | Numericals                               |
|       | Day 31 | Numericals                               |
|       | Day 32 | Problems                                 |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u>  |
|       | Sunday |  |
| 3     | Day 33 | Problems                                 |
|       |        | <u>MahaShivratri</u>                     |
|       | Day 34 | Unit Test - I                            |
|       | Day 35 | Basic of electric properties of matter   |
|       | Day 36 | Basic of electric properties of matter   |
|       | Day 37 | Basic of electric properties of matter   |
|       |        | Sunday                                   |
| 4     | Day 38 | Basic of electric properties of matter   |
|       | Day 39 | Basic of electric properties of matter   |
|       | Day 40 | Qualitative description of free electron |
|       | Day 41 | theory and its inadequacies              |
|       | Day 42 | theory and its inadequacies              |
|       | Day 43 | theory and its inadequacies              |
|       |        | Sunday                                   |
| 5     | Day 44 | Specific heat of electrons in a          |
|       | Day 45 | Metal                                    |
|       | Day 46 | Metal                                    |

|       |        |   |
|-------|--------|---|
| 1-Mar |        | <u>Guru Ravidas Birthday</u>                                |
|       |        | reaction and uses of BHC                                    |
|       | Day 47 | Metal   |
|       |        |   |
| 2     | Day 48 | Elementary band theory - Bloch theorem                      |
|       | Day 49 | Elementary band theory - Bloch theorem                      |
|       | Day 50 | Elementary band theory - Bloch theorem                      |
|       | Day 51 | Kronig - Penney Model                                       |
|       | Day 52 | Kronig - Penney Model                                       |
|       | Day 53 | Kronig - Penney Model                                       |
|       |        | Sunday  |
| 3     | Day 54 | Effective mass of electron.                                 |
|       | Day 55 | Effective mass of electron.                                 |
|       | Day 56 | Concept of hole   |
|       | Day 57 | Band gaps   |
|       | Day 58 | Band gaps   |
|       | Day 59 | Difference between conductors                               |
|       |        | Sunday  |
| 4     | Day 60 | Semiconductor and insulator                                 |
|       | Day 61 | Conductivity of semi conductors                             |
|       | Day 62 | Mobility of carriers.                                       |
|       | Day 63 | Numericals  |
|       |        | <u>Shaheedidiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|       | Day 64 | Numericals  |
|       |        | <u>Sunday/ Ram Navami</u>                                   |
| 5     | Day 65 | Numericals  |
|       | Day 66 | Unit Test - II  |
|       | Day 67 |   |
|       |        | <u>MahavirJayanti</u>                                       |
|       | Day 68 |   |
|       | Day 69 |   |

|       |        |   |
|-------|--------|---|
| 1-Apr |        | Sunday  |
|       | Day 70 |   |
|       | Day 71 |   |
|       | Day 72 |   |
|       | Day 73 |   |
|       | Day 74 |   |
|       | Day 75 |   |
|       |        | Sunday  |
| 2     | Day 76 |   |
|       | Day 77 |   |
|       | Day 78 |   |
|       | Day 79 |   |
|       | Day 80 |   |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a> |
|       |        | Sunday  |
| 3     | Day 81 |   |
|       | Day 82 |   |
|       |        | <a href="#">ParashuramaJayanti</a>            |
|       | Day 83 |   |
|       | Day 84 |   |
|       | Day 85 |   |
|       |        | Sunday  |
| 4     | Day 86 |   |
|       | Day 87 |   |
|       | Day 88 |   |
|       | Day 89 |   |
|       | Day 90 |   |
|       | Day 91 |   |

Lesson Plan

| Name of the Assistant/ Associate Professor..... |        | Mr. Anil Rana                       |
|---|--------|-------------------------------------|
| Class and Section:.....                         |        | M. Sc (Physics 2nd Sem.)            |
| Subject:.....                                   |        | Atomic and Molecular Physics        |
| Week  |        | Topics                              |
| 1   | Day 1  | Quantum states of one electron atom |
|   | Day 2  | Quantum states of one electron atom |
|   | Day 3  | Atomic orbitals                     |
|   | Day 4  | Hydrogen Spectrum                   |
|   | Day 5  | Hydrogen Spectrum                   |
|   | Day 6  | Pauli Principle                     |
|   |        | Sunday                              |
| 2   | Day 7  | Spectra of alkali elements          |
|   | Day 8  | Spectra of alkali elements          |
|   | Day 9  | Spin orbit Interaction              |
|   | Day 10 | Spin orbit Interaction              |
|   | Day 11 | Fine structure of alkali spectra    |
|   | Day 12 | Fine structure of alkali spectra    |
|   |        |                                     |
| 3   | Day 13 | Spectra of two electron system      |
|   | Day 14 | Spectra of two electron system      |
|   | Day 15 | Spectra of two electron system      |
|   | Day 16 | Fequivalent and non-equivalent      |
|   | Day 17 | electrons                           |
|   | Day 18 | electrons                           |
|   |        | Sunday                              |
| 4   |        | <u>VasantPanchami</u>               |
|   | Day 19 | Numericals                          |
|   |        | <u>Sir Chhotu Ram Jayanti</u>       |
|   | Day 20 | Unit Test I                         |
|   |        | <u>Republic Day</u>                 |
|   | Day 21 | The influence of external fields    |
|   |        | Sunday                              |
| 5   | Day 22 | Two electron system                 |
|   | Day 23 | Hyperfine structure                 |
|   | Day 24 | Normal and anomolous zeeman         |

|       |        |   |
|-------|--------|---|
| 1-Feb | Day 25 | effect, Pasablen back effect, stark     |
|       | Day 26 | effect                                  |
|       | Day 27 | effect                                  |
|       |        | Sunday                                  |
| 2     | Day 28 | effect                                  |
|       | Day 29 | Two electron system                     |
|       | Day 30 | Interaction energy of LS & jj           |
|       | Day 31 | Coupling                                |
|       | Day 32 | Coupling                                |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u> |
|       |        | Sunday                                  |
| 3     | Day 33 | Hyperfine structure                     |
|       |        | <u>MahaShivratri</u>                    |
|       | Day 34 | Hyperfine structure                     |
|       | Day 35 | Hyperfine structure                     |
|       | Day 36 | effect of magnetic field                |
|       | Day 37 | effect of magnetic field                |
|       |        | Sunday                                  |
| 4     | Day 38 | numericals                              |
|       | Day 39 | numericals                              |
|       | Day 40 | Unit Test II                            |
|       | Day 41 | Diatomic molecules and their            |
|       | Day 42 | rotational spectra                      |
|       | Day 43 | Types of molecules                      |
|       |        | Sunday                                  |
| 5     | Day 44 | Types of molecules                      |
|       | Day 45 | Diatomic linear symmetric top           |
|       | Day 46 | Diatomic linear symmetric top           |

|       |        |  |
|-------|--------|--|
| 1-Mar |        | Guru Ravidas Birthday                            |
|       |        | reaction and uses of BHC                         |
|       | Day 47 | asymmetric top                                   |
|       |        |  |
| 2     | Day 48 | and spherical top molecules                      |
|       | Day 49 | and spherical top molecules                      |
|       | Day 50 | Rotational spectra of diatomic                   |
|       | Day 51 | molecules as a rigid rotator                     |
|       | Day 52 | molecules as a rigid rotator                     |
|       | Day 53 | molecules as a rigid rotator                     |
|       |        | Sunday   |
| 3     | Day 54 | energy level and spectra of non                  |
|       | Day 55 | rigid rotator                                    |
|       | Day 56 | rigid rotator                                    |
|       | Day 57 | Intensity of rotational lines                    |
|       | Day 58 | Intensity of rotational lines                    |
|       | Day 59 | Numericals                                       |
|       |        | Sunday   |
| 4     | Day 60 | Unit Test 2                                      |
|       | Day 61 | Vibrational and Rotational vibration             |
|       | Day 62 | Spectra of Diatomic molecules                    |
|       | Day 63 | Spectra of Diatomic molecules                    |
|       |        | Shaheedidiwas of Bhagat Singh, Rajguru & Sukhdev |
|       | Day 64 | Vibrational energy of diatomic                   |
|       |        | Sunday/ Ram Navami                               |
| 5     | Day 65 | molecules  |
|       | Day 66 | Diatomic molecules as a simple                   |
|       | Day 67 | Harmonic oscillator                              |
|       |        | MahavirJayanti                                   |
|       | Day 68 | Harmonic oscillator                              |
|       | Day 69 | Energy levels and spectrum                       |

|       |        |   |
|-------|--------|---|
| 1-Apr |        | Sunday  |
|       | Day 70 | Energy levels and spectrum                    |
|       | Day 71 | Morse potential energy curve                  |
|       | Day 72 | Morse potential energy curve                  |
|       | Day 73 | Molecules as vibrating rotator                |
|       | Day 74 | Molecules as vibrating rotator                |
|       | Day 75 | Vibrational spectra of diatomic molecules     |
|       |        | Sunday  |
| 2     | Day 76 | Vibrational spectra of diatomic molecules     |
|       | Day 77 | PQR branch                                    |
|       | Day 78 | PQR branch                                    |
|       | Day 79 | Numericals                                    |
|       | Day 80 | Unit Test IV                                  |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a> |
|       |        | Sunday  |
| 3     | Day 81 |   |
|       | Day 82 |   |
|       |        | <a href="#">ParashuramaJayanti</a>            |
|       | Day 83 |   |
|       | Day 84 |   |
|       | Day 85 |   |
|       |        | Sunday  |
| 4     | Day 86 |   |
|       | Day 87 |   |
|       | Day 88 |   |
|       | Day 89 |   |
|       | Day 90 |   |
|       | Day 91 |   |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Somveer

Class and Section: M.Sc (F) 4<sup>th</sup> semester :B

Subject: Electronics-II

| Week | Date   | Topics   |
|------|--------|--|
| 1    | Day 1  | Introduction of syllabus   |
|      | Day 2  | Unit: I Photoelectric effect   |
|      | Day 3  | External Photoelectric Effect detector                                   |
|      | Day 4  | Vacuum photodiode  |
|      | Day 5  | photo-multipliers  |
|      | Day 6  | microchannels  |
|      |        | <b>Sunday</b>  |
| 2    | Day 7  | Internal Photoelectric Effect detectors                                  |
|      | Day 8  | Discuss Semiconductor and its types                                      |
|      | Day 9  | PN Junction Diode  |
|      | Day 10 | pn junction photodiode   |
|      | Day 11 | continue.....  |
|      | Day 12 | solar cell<br>(open circuit voltage, short circuit current, fill factor) |
|      |        | <b>Sunday</b>  |
| 3    | Day 13 | advantages, disadvantages and application of solar cell                  |
|      | Day 14 | pin photodiode   |
|      | Day 15 | Numerical problem discussion   |
|      | Day 16 | Numerical problem discussion   |
|      | Day 17 | Breakdown- Zener and Avalanche   |
|      | Day 18 | avalanche photodiode   |
|      |        | <b>Sunday</b>  |
| 4    |        | <b>Vasant Panchami</b>   |
|      | Day 19 | phototransistor  |
|      |        | <b>Sir Chhotu Ram Jayanti</b>  |
|      | Day 20 | Light emitting diode   |
|      |        | <b>Republic Day</b>  |
|      | Day 21 | continue...  |
|      |        | <b>Sunday</b>  |
| 5    | Day 22 | Numerical problem discussion   |
|      | Day 23 | Last year paper discussion   |
|      | Day 24 | Unit-I Revision  |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr.Somveer

Class and Section: M.Sc (F) 4<sup>th</sup> semester :B

Subject: Electronics-II

| <b>Week</b> | <b>Date</b>   | <b>Topics</b>                              |
|-------------|---------------|--|
| <b>6</b>    | Day 25        | Unit-I Test                                |
|             | Day 26        | Unit-II basic idea of modulation           |
|             | Day 27        | Fundamentals of modulation                 |
|             |               | <b>Sunday</b>                              |
| <b>7</b>    | Day 28        | types of modulation                        |
|             | Day 29        | Amplitude Modulation                       |
|             | Day 30        | Frequency spectra in AM modulation         |
|             | Day 31        | continue...                                |
|             | Day 32        | Power in AM modulated class C amplifier    |
|             |               | <b>Maharshi Dayanand Saraswati Jayanti</b> |
|             | <b>Sunday</b> |  |
| <b>8</b>    | Day 33        | Efficiency modulation                      |
|             |               | <b>Maha Shivratri</b>                      |
|             | Day 34        | linear demodulation of AM waves            |
|             | Day 35        | frequency conversion                       |
|             | Day 36        | continue..                                 |
|             | Day 37        | SSB system                                 |
|             |               | <b>Sunday</b>                              |
| <b>9</b>    | Day 38        | Balanced modulation                        |
|             | Day 39        | continue...                                |
|             | Day 40        | Numerical problem discussion               |
|             | Day 41        | filtering the signal for SSB               |
|             | Day 42        | phase shift method                         |
|             | Day 43        | product detector                           |
|             |               | <b>Sunday</b>                              |
| <b>10</b>   | Day 44        | Pulse modulation: PAM                      |
|             | Day 45        | PTM  |
|             | Day 46        | PWM  |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Somveer

Class and Section: M.Sc (F) 4<sup>th</sup> semester :B

Subject:

**Electronics-II**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>11</b>   |             | <b>Guru Ravidas Birthday</b>                               |
|             |             | <b>Holi</b>  |
|             | Day 47      | PPM  |
|             |             | <b>Sunday</b>  |
| <b>12</b>   | Day 48      | PCM(in brief)  |
|             | Day 49      | Numerical problem discussion                               |
|             | Day 50      | Last year question paper discussion                        |
|             | Day 51      | Unit- II Test  |
|             | Day 52      | Unit-III Basic idea of OP-AMP                              |
|             | Day 53      | Differential amplifier                                     |
|             |             | <b>Sunday</b>  |
| <b>13</b>   | Day 54      | CMRR, circuit configuration                                |
|             | Day 55      | Emitter coupled supplied with constant current             |
|             | Day 56      | transfer characteristics, block diagram of Op. Amp.        |
|             | Day 57      | Off-set currents and voltages                              |
|             | Day 58      | PSRR, Slew rate  |
|             | Day 59      | universal balancing techniques                             |
|             |             | <b>Sunday</b>  |
| <b>14</b>   | Day 60      | Numerical Problem discussion                               |
|             | Day 61      | continue....   |
|             | Day 62      | Inverting and non-inverting amplifier                      |
|             | Day 63      | basic applications- summing                                |
|             |             | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b> |
|             | Day 64      | scaling  |
|             |             | <b>Sunday/ Ramnavami</b>                                   |
| <b>15</b>   | Day 65      | current to voltage conversion                              |
|             | Day 66      | voltage to current signal conversion                       |
|             | Day 67      | differential dc amplifier                                  |
|             |             | <b>Mahavir Jayanti</b>                                     |
|             | Day 68      | continue...  |
|             | Day 69      | voltage follower   |

### **Lesson Plan**

Name of the Assistant/ Associate professor: Mr. Somveer

Class and Section:

**M.Sc (F) 4<sup>th</sup> semester :B**

Subject:

**Electronics-II**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>16</b>   |             | <b>Sunday</b>  |
|             | Day 70      | bridge amplifier   |
|             | Day 71      | AC-coupled amplifier   |
|             | Day 72      | Numerical Problem & Last year paper Discussion                   |
|             | Day 73      | Unit-III Test  |
|             | Day 74      | Unit-IV Integration  |
|             | Day 75      | differentiation  |
|             |             | <b>Sunday</b>  |
| <b>17</b>   | Day 76      | analog computation   |
|             | Day 77      | Butterworth active filter circuits                               |
|             | Day 78      | logarithmic amplifier, antilogarithmic amplifier                 |
|             | Day 79      | sample and hold circuits   |
|             | Day 80      | digital to analog conversion –ladder and weighted resistor types |
|             |             | <b>Dr. Ambedkar Jayanti/Vaisakhi</b>                             |
|             |             | <b>Sunday</b>  |
| <b>18</b>   | Day 81      | analog to digital conversion- counter type, AC/DC converters     |
|             | Day 82      | comparators, regenerative comparator (Schemitt trigger)          |
|             |             | <b>Parashurama Jayanti</b>                                       |
|             | Day 83      | Square wave generator, pulse generator                           |
|             | Day 84      | triangle wave generator  |
|             | Day 85      | <b>Completion of 4<sup>th</sup> unit</b>                         |
|             |             | <b>Sunday</b>  |
| <b>19</b>   | Day 86      | <b>Unit revision-1 (Important topics)</b>                        |
|             | Day 87      | <b>Unit revision-II (Important topics)</b>                       |
|             | Day 88      | <b>Unit revision-III(Important topics)</b>                       |
|             | Day 89      | <b>Unit revision-IV(Important topics)</b>                        |
|             | Day 90      | <b>Assignment Preparation</b>                                    |
|             | Day 91      | <b>Assignment Preparation</b>                                    |

## Lesson Plan

Name of the Assistant/ Associate professor: Ms. NISHA

Class and Section:

M.Sc (F) 4<sup>th</sup> semester :A

Subject:

ATOMIC AND MOLECULAR PHYSICS -II

| <b>Week</b> | <b>Date</b> | <b>Topics</b>                                      |
|-------------|-------------|--|
| <b>1</b>    | Day 1       | Introduction of syllabus                           |
|             | Day 2       | Unit: I NMR  |
|             | Day 3       | The principle of NMR                               |
|             | Day 4       | NMR spectrometer                                   |
|             | Day 5       | NMR spectrometer                                   |
|             | Day 6       | Types of nuclei viewed from the stand point of NMR |
|             |             | <b>Sunday</b>                                      |
| <b>2</b>    | Day 7       | High Resolution and Broad line NMR                 |
|             | Day 8       | Relaxation mechanisms,                             |
|             | Day 9       | Chemical shift                                     |
|             | Day 10      | Spin spin coupling                                 |
|             | Day 11      | continue.....                                      |
|             | Day 12      | revision   |
|             |             | <b>Sunday</b>                                      |
| <b>3</b>    | Day 13      | Problems & assignment 1                            |
|             | Day 14      | Applications of NMR spectroscopy                   |
|             | Day 15      | Numerical problem discussion                       |
|             | Day 16      | Numerical problem discussion                       |
|             | Day 17      | Revision of NMR                                    |
|             | Day 18      | Class test of NMR                                  |
|             |             | <b>Sunday</b>                                      |
| <b>4</b>    |             | <b>Vasant Panchami</b>                             |
|             | Day 19      | Mossbauer Spectrometer                             |
|             |             | <b>Sir Chhotu Ram Jayanti</b>                      |
|             | Day 20      | Isomer nuclear transition                          |
|             |             | <b>Republic Day</b>                                |
|             | Day 21      | continue...  |
|             |             | <b>Sunday</b>                                      |
| <b>5</b>    | Day 22      | Numerical problem discussion                       |
|             | Day 23      | Last year paper discussion                         |
|             | Day 24      | Resonance fluorescence                             |

## Lesson Plan

Name of the Assistant/ Associate professor: Ms. NISHA

Class and Section:

M.Sc (F) 4<sup>th</sup> semester :A

Subject:

ATOMIC AND MOLECULAR PHYSICS-II

| Week      | Date          | Topics   |
|-----------|---------------|--|
| <b>6</b>  | Day 25        | Mossbauer effect,  |
|           | Day 26        | Mossbauer nuclei,  |
|           | Day 27        | Isomer shift   |
|           |               | <b>Sunday</b>  |
| <b>7</b>  | Day 28        | , quadrupole splitting   |
|           | Day 29        | Magnetic hyperfine structure   |
|           | Day 30        | Applications of Mossbauer spectroscopy.  |
|           | Day 31        | continue...  |
|           | Day 32        | REVISION OF UNIT 1   |
|           |               | <b>Maharshi Dayanand Saraswati Jayanti</b>   |
|           | <b>Sunday</b> |  |
| <b>8</b>  | Day 33        | Problems & ASSIGNMENT 2  |
|           |               | <b>Maha Shivratri</b>  |
|           | Day 34        | Class test of unit 1   |
|           | Day 35        | Unit 2 – ESR spectrometer  |
|           | Day 36        | substances which can be studied by ESR   |
|           | Day 37        | Resonance condition  |
|           |               | <b>Sunday</b>  |
| <b>9</b>  | Day 38        | Description of ESR by Precession   |
|           | Day 39        | continue...  |
|           | Day 40        | Numerical problem discussion   |
|           | Day 41        | Relaxation mechanisms  |
|           | Day 42        | Features of ESR spectra (a) the g factor (b) Fine structure (c) hyperfine structure (d) ligand hyperfine structure |
|           | Day 43        | Continue.....  |
|           |               | <b>Sunday</b>  |
| <b>10</b> | Day 44        | Continue....   |
|           | Day 45        | . Applications of ESR  |
|           | Day 46        | doubts   |

### Lesson Plan

Name of the Assistant/ Associate professor: Ms. NISHA

Class and Section:

M.Sc (F) 4<sup>th</sup> semester :A

Subject:

**Electronics-II**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>11</b>   |             | <b>Guru Ravidas Birthday</b>                               |
|             |             | <b>Holi</b>  |
|             | Day 47      | Revision of unit 2   |
|             |             | <b>Sunday</b>  |
| <b>12</b>   | Day 48      | Class test of unit 2                                       |
|             | Day 49      | Numerical problem discussion                               |
|             | Day 50      | Last year question paper discussion                        |
|             | Day 51      | Unit- 3 introduction to lasers                             |
|             | Day 52      | Spontaneous and stimulated emission, absorption            |
|             | Day 53      | Einstein coefficients                                      |
|             |             | <b>Sunday</b>  |
| <b>13</b>   | Day 54      | The laser idea   |
|             | Day 55      | properties of laser beams                                  |
|             | Day 56      | Rate equations   |
|             | Day 57      | Continue.....  |
|             | Day 58      | Problems & assignment 3                                    |
|             | Day 59      | methods of obtaining population inversions                 |
|             |             | <b>Sunday</b>  |
| <b>14</b>   | Day 60      | Numerical Problem discussion                               |
|             | Day 61      | continue....   |
|             | Day 62      | laser resonator  |
|             | Day 63      | Revision of unit 3   |
|             |             | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b> |
|             | Day 64      | Class test of unit 3                                       |
|             |             | <b>Sunday/ Ramnavami</b>                                   |
| <b>15</b>   | Day 65      | Unit 4 Nd: YAG Laser                                       |
|             | Day 66      | CO2 laser  |
|             | Day 67      | Nitrogen laser   |
|             |             | <b>Mahavir Jayanti</b>                                     |
|             | Day 68      | Dye lasers   |
|             | Day 69      | revision   |

### **Lesson Plan**

Name of the Assistant/ Associate professor: Ms. **NISHA**

Class and Section: **M.Sc (F) 4<sup>th</sup> semester :A**

Subject: **ATOMIC MOLECULAR PHYSICS-II**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>16</b>   |             | <b>Sunday</b>  |
|             | Day 70      | Problems and assignment 4  |
|             | Day 71      | Applications: Holography material processing fusion reaction, laser isotopes |
|             | Day 72      | Numerical Problem & Last year paper Discussion                               |
|             | Day 73      | Laser isotopes separation  |
|             | Day 74      | Continue.....  |
|             | Day 75      |  |
|             |             | <b>Sunday</b>  |
| <b>17</b>   | Day 76      | doubts   |
|             | Day 77      | Revision of unit 4   |
|             | Day 78      | Class test of unit 4   |
|             | Day 79      | problems   |
|             | Day 80      | Assignments  |
|             |             | <b>Dr. Ambedkar Jayanti/Vaisakhi</b>   |
|             |             | <b>Sunday</b>  |
| <b>18</b>   | Day 81      | Revision unit 1  |
|             | Day 82      | Doubts unit 1  |
|             |             | <b>Parashurama Jayanti</b>   |
|             | Day 83      | Numerical problems unit 1  |
|             | Day 84      | Revision unit 2  |
|             | Day 85      | <b>Completion of 4<sup>th</sup> unit</b>                                     |
|             |             | <b>Sunday</b>  |
| <b>19</b>   | Day 86      | <b>doubts</b>  |
|             | Day 87      | <b>Revision unit 3</b>   |
|             | Day 88      | <b>doubts</b>  |
|             | Day 89      | <b>Revision unit 4</b>   |
|             | Day 90      | <b>doubts</b>  |
|             | Day 91      | <b>Assignment Preparation</b>  |

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Jitendra Gangwar

Class and Section: M. Sc. Physics, Semester IV, Section: A

Subject: Physics of Nanomaterials (17 PHY 24 C2)

| Week |        | Topics  |
|------|--------|---|
| 1    | Day 1  | <b>Unit: I</b> Basics of Nanomaterials                                |
|      | Day 2  | Crystalline and non-crystalline solids                                |
|      | Day 3  | Free electron theory (qualitative idea)----                           |
|      | Day 4  | Free electron theory (qualitative idea).                              |
|      | Day 5  | Features of free electron theory                                      |
|      | Day 6  | <i>Discussion with students</i>                                       |
|      |        | Sunday  |
| 2    | Day 7  | Idea of Band structure  |
|      | Day 8  | Idea of Band structure  |
|      | Day 9  | Band structure of metals  |
|      | Day 10 | Band structure of metals  |
|      | Day 11 | Band structure of insulators  |
|      | Day 12 | Band structure of semiconductors                                      |
|      |        | Sunday  |
| 3    | Day 13 | Band structure of semiconductors                                      |
|      | Day 14 | Band structure of semiconductors                                      |
|      | Day 15 | <i>Discussion with students</i>                                       |
|      | Day 16 | Density of states in bands  |
|      | Day 17 | Density of states in bands  |
|      | Day 18 | Density of states in bands  |
|      |        | Sunday  |
| 4    |        | <u>VasantPanchami</u>   |
|      | Day 19 | Variation of Density of states with energy                            |
|      |        | <u>Sir Chhotu Ram Jayanti</u>   |
|      | Day 20 | Variation of Density of states with energy                            |
|      |        | <u>Republic Day</u>   |
|      | Day 21 | Variation of Density of states with size of crystal                   |
|      | Sunday |   |
| 5    | Day 22 | Variation of Density of states with size of crystal                   |
|      | Day 23 | Revision of above taught topics                                       |
|      | Day 24 | <i>Discussion with students: Probles related to density of states</i> |

|       |        |  |
|-------|--------|--|
| 1-Feb | Day 25 | Numericals based on Variation of Density of States                   |
|       | Day 26 | Variation of band gap with size of crystal                           |
|       | Day 27 | Variation of band gap with size of crystal.                          |
|       |        | Sunday   |
| 2     | Day 28 | <b>Completion of 1<sup>st</sup> Unit [Unit test: 01]</b>             |
|       | Day 29 | <b>Unit: II</b> Basic Introduction to related topics                 |
|       | Day 30 | Electron confinement: An Introduction                                |
|       | Day 31 | Electron confinement in infinity deep square well in 3-dimension     |
|       | Day 32 | Electron confinement in infinity deep square well in 3-dimension     |
|       |        | <u>MaharshiDayanandSaraswatiJayanti</u>                              |
|       |        | Sunday   |
| 3     | Day 33 | Electron confinement in infinity deep square well in 3-dimension     |
|       |        | <u>MahaShivratri</u>   |
|       | Day 34 | Electron confinement in infinity deep square well in 2-dimension     |
|       | Day 35 | Electron confinement in infinity deep square well in 2-dimension     |
|       | Day 36 | Electron confinement in infinity deep square well in 1-dimension     |
|       | Day 37 | <i>Problems discussion</i>   |
|       |        | Sunday   |
| 4     | Day 38 | Idea of Quantum well structure                                       |
|       | Day 39 | Idea of Quantum well structure                                       |
|       | Day 40 | Quantum Dots   |
|       | Day 41 | Properties and Applications of Quantum Dots                          |
|       | Day 42 | Quantum wires  |
|       | Day 43 | Properties and Applications of Quantum Wires                         |
|       |        | Sunday   |
| 5     | Day 44 | <i>Problems discussion related to Quantum dots and Quantum wires</i> |
|       | Day 45 | Revision of above taught topics                                      |
|       | Day 46 | <b>Completion of 2<sup>nd</sup> Unit [Unit test: 02]</b>             |

|       |        |   |
|-------|--------|---|
| 1-Mar |        | <u>Guru Ravidas Birthday</u>                                    |
|       |        | <u>Holi</u>   |
|       | Day 47 | <b>Unit: III Basic Introduction to Nanostructured materials</b> |
|       |        | Sunday  |
| 2     | Day 48 | <i>Sessional Test: 01 [Unit 01 and 02]</i>                      |
|       | Day 49 | Difference between Particle size and Crystallite size           |
|       | Day 50 | Techniques used to determine the particle size                  |
|       | Day 51 | Determination of Particle size                                  |
|       | Day 52 | Increase in width of XRD peaks of Nanoparticles                 |
|       | Day 53 | Increase in width of XRD peaks of Nanoparticles                 |
|       |        | Sunday  |
| 3     | Day 54 | Introduction to photoluminescence (PL)                          |
|       | Day 55 | Introduction to photoluminescence (PL)                          |
|       | Day 56 | PL spectra of various nanomaterials                             |
|       | Day 57 | observation of PL peaks in PL spectra                           |
|       | Day 58 | shift in PL peaks in PL spectra                                 |
|       | Day 59 | shift in PL peaks in PL spectra                                 |
|       |        | Sunday  |
| 4     | Day 60 | Revision of above taught topics                                 |
|       | Day 61 | Raman spectra of Nanomaterials                                  |
|       | Day 62 | Properties and utilization of Raman Spectra                     |
|       | Day 63 | Properties and utilization of Raman Spectra                     |
|       |        | <u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>     |
|       | Day 64 | Variation in Raman spectra of nanomaterials                     |
|       |        | <u>Sunday/ Ram Navami</u>                                       |
| 5     | Day 65 | Numericals based on XRD peaks                                   |
|       | Day 66 | Numericals based on particle size determination                 |
|       | Day 67 | Numericals based on particle size determination                 |
|       |        | <u>MahavirJayanti</u>   |
|       | Day 68 | <i>Summarize the Unit: III</i>                                  |
|       | Day 69 | <b>Completion of 3<sup>rd</sup> Unit [Unit test: 03]</b>        |

|       |        |  |
|-------|--------|--|
| 1-Apr |        | Sunday   |
|       | Day 70 | <b>Unit: IV Classification of Nanostructured materials</b> |
|       | Day 71 | Preparation/ synthesis of Nanomaterials                    |
|       | Day 72 | Basic introduction to Bottom-up synthesis of nanomaterials |
|       | Day 73 | Basic introduction to Bottom-up synthesis of nanomaterials |
|       | Day 74 | Basic introduction to Top-down synthesis of nanomaterials  |
|       | Day 75 | <b><i>Sessional Test: 02 [Unit 03]</i></b>                 |
|       |        | Sunday   |
| 2     | Day 76 | Bottom -up: Cluster beam evaporation                       |
|       | Day 77 | Bottom -up: Cluster beam evaporation                       |
|       | Day 78 | Ion beam deposition  |
|       | Day 79 | Ion beam deposition  |
|       | Day 80 | Chemical bath deposition (CBD)                             |
|       |        | <a href="#">Dr AmbedkarJayanti / Vaisakhi</a>              |
|       |        | Sunday   |
| 3     | Day 81 | CBD with capping techniques                                |
|       | Day 82 | CBD with capping techniques                                |
|       |        | <a href="#">ParashuramaJayanti</a>                         |
|       | Day 83 | Revision of all bottom-up methods                          |
|       | Day 84 | top-down approach  |
|       | Day 85 | Difference between Bottom-up and top-down approach         |
|       |        | Sunday   |
| 4     | Day 86 | Different types of Top-down methods                        |
|       | Day 87 | Ball milling   |
|       | Day 88 | Ball milling   |
|       | Day 89 | Last year papers solution (2016)                           |
|       | Day 90 | Last year papers solution (2015)                           |
|       | Day 91 | <b><i>Sessional Test: 03 [Unit 04]</i></b>                 |

## Lesson Plan

Name of the Assistant/ Associate Professor - Archana Sahoo

Class and Section: **M.Sc 2<sup>nd</sup> Sem.**

Subject: **Quantum Mechanics-II**

| Week  | Date      | Topics  |
|-------|-----------|---|
| 1     | Day1      | Introduction                                  |
|       | Day2      | Helium atom                                   |
|       | Day3      | Ground state of He atom by variation method   |
|       | Day4      | Ground state of the atom by variational.      |
|       | Day5      | Ground state of the He by variational method. |
|       | Day6      | perturbation method                           |
|       | 7-Jan-18  | Sunday  |
| 2     | Day7      | Ground state of He by perturbation method     |
|       | Day8      | Ground state of He by perturbation method     |
|       | Day9      | Hydrogen molecule                             |
|       | Day10     | WKB approximation                             |
|       | Day11     | WKB approximation                             |
|       | Day12     | Time dependent perturbation                   |
|       | 14-Jan-18 | Sunday  |
| 3     | Day13     | Constant perturbation                         |
|       | Day14     | Harmonic perturbation                         |
|       | Day15     | Fermi's golden rule                           |
|       | Day16     | Adiabatic approximation                       |
|       | Day17     | Adiabatic approximation                       |
|       | Day18     | Sudden approximation                          |
|       | 21-Jan-18 | Sunday  |
| 4     | 22-Jan-18 | Vasant Panchami                               |
|       | Day19     | Sudden approximation                          |
|       | 24-Jan-18 | Sir Chhotu Ram Jayanti                        |
|       | Day20     | Class Test-I (Unit-01)                        |
|       | 26-Jan-18 | Republic Day                                  |
|       | Day21     | Unit-II<br>Idea of Absorption and emission    |
|       | 28-Jan-18 | Sunday  |
|       | 5         | Day22   |
| Day23 |           | Transition probability of induced.            |
| Day24 |           | Emission                                      |

## Lesson Plan

Name of the Assistant/ Associate Professor - Archana Sahoo

Class and Section: **M.Sc A**

Subject: **Quantum Mechanics-II**

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | Day25     | Electric dipole transitions                     |
|      | Day26     | Selection Rules.                                |
|      | Day27     | Magnetic dipole transitions                     |
|      | 4-Feb-18  | Sunday  |
| 2    | Day28     | Forbidden transitions                           |
|      | Day29     | Higher order transitions                        |
|      | Day30     | Einstein's coefficient                          |
|      | Day31     | Unit Test-02                                    |
|      | Day32     | Unit-III<br>Laboratory and CM reference frames. |
|      | 10-Feb-18 | Maharshi Dayanand Saraswati Jayanti             |
|      | 11-Feb-18 | Sunday  |
| 3    | Day33     | Relation of L system and C system               |
|      | 13-Feb-18 | Maha Shivratri                                  |
|      | Day34     | Scattering amplitude                            |
|      | Day35     | Differential scattering cross section           |
|      | Day36     | Total Scattering cross section                  |
|      | Day37     | The optical theorem                             |
|      | 18-Feb-18 | Sunday  |
| 4    | Day38     | Spherically symmetric potentials.               |
|      | Day39     | Scattering of spherically symmetric             |
|      | Day40     | Potentials                                      |
|      | Day41     | Partial waves                                   |
|      | Day42     | Partial waves                                   |
|      | Day43     | Phase shifts                                    |
|      | 25-Feb-18 | Sunday  |
| 5    | Day44     | Scattering by a perfectly rigid sphere          |
|      | Day45     | Scattering by square well potentials            |
|      | Day46     | Complex potential and absorption                |

## Lesson Plan

Name of the Assistant/ Associate Professor - Archana Sahoo

Class and Section: **M.Sc A**

Subject: **Quantum Mechanics-II**

| Week | Date      | Topics  |
|------|-----------|---|
| 1    | 1-Mar-18  | Guru Ravidas Birthday                             |
|      | 2-Mar-18  | Holi  |
|      | Day47     | Scattering by square well potentials              |
|      | 4-Mar-18  | Sunday  |
| 2    | Day48     | Complex potentials and absorption                 |
|      | Day49     | Complex potentials and absorptions                |
|      | Day50     | Born approximation                                |
|      | Day51     | Born approximation                                |
|      | Day52     | Numerical   |
|      | Day53     |   |
|      | 11-Mar-18 | Sunday  |
| 3    | Day54     | Numerical   |
|      | Day55     | Unit test of Unit-III                             |
|      | Day56     | Unit test of Unit-III                             |
|      | Day57     | Unit-IV<br>Introduction of Indistinguish          |
|      | Day58     | ibility   |
|      | Day59     | Symmetric wave functions.                         |
|      | 18-Mar-18 | Sunday  |
| 4    | Day60     | Symmetric wave functions                          |
|      | Day61     | Anti symmetric wave functions                     |
|      | Day62     | Anti symmetric wave functions                     |
|      | Day63     | Spin & Statistics                                 |
|      | 23-Mar-18 | Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev |
|      | Day64     | Spin and Statistics of identical Particles        |
|      | 25-Mar-18 | Sunday/ Ram Navami                                |
| 5    | Day65     | Spin and Statistics of identical Particles        |
|      | Day66     | Numerical   |
|      | Day67     | Numerical   |
|      | 29-Mar-18 | Mahavir Jayanti                                   |
|      | Day68     | The slatter determinant                           |
|      | Day69     | The slatter determinant                           |

## Lesson Plan

Name of the Assistant/ Associate Professor - Archana Sahoo

Class and Section: **M.Sc A**

Subject: **Quantum Mechanics-II**

| Week | Date      | Topics                             |
|------|-----------|------------------------------------|
| 1    | 1-Apr-18  | Sunday                             |
|      | Day70     | The Pauli exclusion principle      |
|      | Day71     | The Pauli exclusion principle      |
|      | Day72     | Numerical                          |
|      | Day73     | Numerical                          |
|      | Day74     | Spin states of two electron system |
|      | Day75     | Spin states of two electron system |
|      | 8-Apr-18  | Sunday                             |
| 2    | Day76     | States of the He atoms             |
|      | Day77     | States of He atoms                 |
|      | Day78     | Collision of identical particles.  |
|      | Day79     | Collision of identical particles.  |
|      | Day80     | Numerical                          |
|      | 14-Apr-18 | Dr Ambedkar Jayanti / Vaisakhi     |
|      | 15-Apr-18 | Sunday                             |
| 3    | Day81     | Numerical                          |
|      | Day82     | Unit test-IV                       |
|      | 18-Apr-18 | Parashurama Jayanti                |
|      | Day83     | Unit test-IV                       |
|      | Day84     | Revision                           |
|      | Day85     | Revision                           |
|      | 22-Apr-18 | Sunday                             |
| 4    | Day86     | Revision                           |
|      | Day87     | Revision                           |
|      | Day88     | Revision                           |
|      | Day89     | Revision                           |
|      | Day90     | Revision                           |
|      | Day91     | Revision                           |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section:

**M.Sc. (F) 4<sup>th</sup> semester :A**

Subject:

Nuclear and particle physics **-II**

| Week | Date   | Topics  |
|------|--------|---|
| 1    | Day 1  | Introduction of syllabus                                  |
|      | Day 2  | Unit: Two nucleon problem and nuclear forces:             |
|      | Day 3  | Binding energy, dipole moment                             |
|      | Day 4  | quadrupole moment   |
|      | Day 5  | the evidence of non-central (Tensor) force                |
|      | Day 6  | Numerical & problems                                      |
|      |        | <b>Sunday</b>   |
| 2    | Day 7  | Nucleon-nucleon scattering                                |
|      | Day 8  | s-wave effective range theory                             |
|      | Day 9  | charge independence and charge symmetry of nuclear forces |
|      | Day 10 | iso-spin formalism.                                       |
|      | Day 11 | Revision of basic concepts                                |
|      | Day 12 | spin dependence of nuclear force                          |
|      |        | <b>Sunday</b>   |
| 3    | Day 13 | Problems & assignment 1                                   |
|      | Day 14 | Group discussion  |
|      | Day 15 | Numerical problem discussion                              |
|      | Day 16 | Numerical problem discussion                              |
|      | Day 17 | Revision of Two nucleon problem and nuclear forces        |
|      | Day 18 | Class test of Two nucleon problem and nuclear forces      |
|      |        | <b>Sunday</b>   |
| 4    |        | <b>Vasant Panchami</b>                                    |
|      | Day 19 | Unit II Nuclear Models: introduction                      |
|      |        | <b>Sir Chhotu Ram Jayanti</b>                             |
|      | Day 20 | Liquid drop model ,                                       |
|      |        | <b>Republic Day</b>                                       |
|      | Day 21 | continue...   |
|      |        | <b>Sunday</b>   |
| 5    | Day 22 | stability of nuclei                                       |
|      | Day 23 | Continue.....   |
|      | Day 24 | fission   |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. **Praveen**

Class and Section: **M.Sc.(F) 4<sup>th</sup> semester :A**

Subject: Nuclear and particle physics **-II**

| <b>Week</b> | <b>Date</b>   | <b>Topics</b>                                    |
|-------------|---------------|--|
| <b>6</b>    | Day 25        | evidence of shell structure                      |
|             | Day 26        | Continue.....                                    |
|             | Day 27        | the shell model spin parity                      |
|             |               | <b>Sunday</b>                                    |
| <b>7</b>    | Day 28        | Continue.....                                    |
|             | Day 29        | magnetic moment in extreme single particle model |
|             | Day 30        | Continue.....                                    |
|             | Day 31        | evidence of collective excitations               |
|             | Day 32        | collective vibration of a spherical liquid drop  |
|             |               | <b>Maharshi Dayanand Saraswati Jayanti</b>       |
|             | <b>Sunday</b> |  |
| <b>8</b>    | Day 33        | Problems   |
|             |               | <b>Maha Shivratri</b>                            |
|             | Day 34        | Revision of basic concept                        |
|             | Day 35        | Group discussion                                 |
|             | Day 36        | Unit test 2                                      |
|             | Day 37        | Result and discussion                            |
|             | <b>Sunday</b> |  |
| <b>9</b>    | Day 38        | Unit III Nuclear decays and nuclear reactions    |
|             | Day 39        | Alpha decay                                      |
|             | Day 40        | Continue.....                                    |
|             | Day 41        | Beta decay                                       |
|             | Day 42        | Gamma decay                                      |
|             | Day 43        | Continue.....                                    |
|             | <b>Sunday</b> |  |
| <b>10</b>   | Day 44        | Selections rules                                 |
|             | Day 45        | Fermi's theory of beta decay, selection rules    |
|             | Day 46        | Continue...                                      |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section: M.Sc. (F) 4<sup>th</sup> semester :A

**Nuclear and particle physics**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>11</b>   |             | <b>Guru Ravidas Birthday</b>                               |
|             |             | <b>Holi</b>  |
|             | Day 47      | Kurie plot Fermi and Gamow -Teller Transitions             |
|             |             | <b>Sunday</b>  |
| <b>12</b>   | Day 48      | comparative half lines                                     |
|             | Day 49      | parity non-conservation in beta decay                      |
|             | Day 50      | Reaction cross section                                     |
|             | Day 51      | compound nuclear reactions                                 |
|             | Day 52      | direct reactions   |
|             | Day 53      | the optical model  |
|             |             | <b>Sunday</b>  |
| <b>13</b>   | Day 54      | Continue....   |
|             | Day 55      | doubts   |
|             | Day 56      | Breit-Winger resonance formula for $l=0$ .                 |
|             | Day 57      | Numerical problem and discussion                           |
|             | Day 58      | Class test   |
|             | Day 59      | Last year paper discussion                                 |
|             |             | <b>Sunday</b>  |
| <b>14</b>   | Day 60      | Result and group discussion                                |
|             | Day 61      | Unit 1 revision of important topics                        |
|             | Day 62      | Binding energy, dipole moment.....                         |
|             | Day 63      | the evidence of non-central (Tensor) force.....            |
|             |             | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b> |
|             | Day 64      | Unit 2 revision  |
|             |             | <b>Sunday/ Ramnavami</b>                                   |
| <b>15</b>   | Day 65      | The shell model spin parity.....                           |
|             | Day 66      | collective vibration of a spherical liquid drop.....       |
|             | Day 67      | Unit 3 revision  |
|             |             | <b>Mahavir Jayanti</b>                                     |
|             | Day 68      | Kurie plot Fermi and Gamow -Teller Transitions.....        |
|             | Day 69      | Reaction cross section , compound reaction.....            |

**Lesson Plan**

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section: M.Sc.(F) 4<sup>th</sup> semester :A

Subject:

**Nuclear and particle physics**

| <b>Week</b> | <b>Date</b> | <b>Topics</b>   |
|-------------|-------------|---|
| <b>16</b>   |             | <b>Sunday</b>   |
|             | Day 70      | Unit IV Elementary Particle: introduction                                 |
|             | Day 71      | Basic interactions in nature : Gravitational, Electromagnetic             |
|             | Day 72      | weak and strong   |
|             | Day 73      | classification of elementary particles, Leptons, Hadrons                  |
|             | Day 74      | Mesons, Baryons   |
|             | Day 75      | Continue.....   |
|             |             | <b>Sunday</b>   |
| <b>17</b>   | Day 76      | Conservation Laws for Elementary Particles                                |
|             | Day 77      | Baryon, Lepton and Muon number  |
|             | Day 78      | Strangeness and Hypercharge   |
|             | Day 79      | , Gellman - Nishijima formula   |
|             | Day 80      | Continue....  |
|             |             | <b>Dr. Ambedkar Jayanti/Vaisakhi</b>                                      |
|             |             | <b>Sunday</b>   |
| <b>18</b>   | Day 81      | Quark model, SU (2) and SU (3) Symmetries Parities of subatomic particles |
|             | Day 82      | Continue...   |
|             |             | <b>Parashurama Jayanti</b>  |
|             | Day 83      | charge conjugation, , Time reversal                                       |
|             | Day 84      | Revision of basic concepts  |
|             | Day 85      | <b>Completion of 4<sup>th</sup> unit</b>                                  |
|             |             | <b>Sunday</b>   |
| <b>19</b>   | Day 86      | <b>Unit revision-1 (Important topics)</b>                                 |
|             | Day 87      | <b>Unit revision-II (Important topics)</b>                                |
|             | Day 88      | <b>Unit revision-III(Important topics)</b>                                |
|             | Day 89      | <b>Unit revision-IV(Important topics)</b>                                 |
|             | Day 90      | <b>Assignment Preparation</b>   |
|             | Day 91      | <b>Assignment Preparation</b>   |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section:

B.Sc. (HP) VI semester

Subject:

Electromagnetic Theory-II

| Week     | Date   | Topics  |
|----------|--------|---|
| <b>1</b> | Day 1  | Unit 1 Polarization phenomenon : Introduction                                       |
|          | Day 2  | Polarization of e.m. waves  |
|          | Day 3  | Continue.....   |
|          | Day 4  | Continue.....   |
|          | Day 5  | Description of linear, circular and elliptical polarization                         |
|          |        | Continue.....   |
|          |        | <b>Sunday</b>   |
| <b>2</b> | Day 6  | Continue.....   |
|          | Day 7  | Continue.....   |
|          | Day 8  | Propagation of e.m waves in anisotropic media Symmetric nature of dielectric tensor |
|          | Day 9  | Continue.....   |
|          | Day 10 | Continue  |
|          |        | Continue.....   |
|          |        | <b>Sunday</b>   |
| <b>3</b> | Day 11 | Fresnel's formula   |
|          | Day 12 | Continue.....   |
|          | Day 13 | . Light propagation in uniaxial crystal   |
|          | Day 14 | Continue.....   |
|          | Day 15 | Continue.....   |
|          |        |   |
|          |        | <b>Sunday</b>   |
| <b>4</b> |        | <b>Vasant Panchami</b>  |
|          | Day 16 | Double refraction   |
|          |        | <b>Sir Chhotu Ram Jayanti</b>   |
|          | Day 17 | Continue.....   |
|          |        | <b>Republic day</b>   |
|          |        |   |
|          |        | <b>Sunday</b>   |
| <b>5</b> | Day 18 | Nicole prism  |
|          | Day 19 | Continue...   |
|          | Day 20 | Continue.....   |

## Lesson Plan

Name of the Assistant/ Associate professor : Mr. Praveen

Class and Section:

B.Sc. (HP) VI semester

Subject:

Electromagnetic Theory-II

| <b>Week</b> | <b>Date</b> | <b>Topics</b>  |
|-------------|-------------|--|
| <b>6</b>    | Day 21      | Production of circularly and elliptically polarized light. |
|             | Day 22      | Continue.....  |
|             |             |  |
|             |             | <b>Sunday</b>  |
| <b>7</b>    | Day 23      | Continue.....  |
|             | Day 24      | Continue.....  |
|             | Day 25      | Babinet compensator  |
|             | Day 26      | Continue.....  |
|             | Day 27      | Continue.....  |
|             |             |  |
|             |             | <b>Sunday</b>  |
| <b>8</b>    | Day 28      | Analysis of polarized light                                |
|             |             | <b>Maha Shivratri</b>                                      |
|             | Day 29      | Continue.....  |
|             | Day 30      | Continue.....  |
|             | Day 31      | Continue.....  |
|             |             |  |
| <b>9</b>    | Day 32      | Revision of basic concepts                                 |
|             | Day 33      | Group discussion   |
|             | Day 34      | Last year paper discussion                                 |
|             | Day 35      | Numerical & problem  |
|             | Day 36      | Class test 1 & assignment                                  |
|             |             |  |
| <b>10</b>   | Day 37      | Unit 2 Wave Guide & Communication                          |
|             | Day 38      | Wave guides  |
|             | Day 39      | Continue.....  |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section: B.Sc. (HP) IV semester

Subject: Electromagnetic Theory-II

| Week      | Date   | Topics   |
|-----------|--------|--|
| <b>11</b> |        | <b>Guru Ravidas Birthday</b>                               |
|           |        | <b>Holi</b>  |
|           |        | <b>Sunday</b>  |
| <b>12</b> | Day 40 | Continue.....  |
|           | Day 41 | Continue.....  |
|           | Day 42 | Coaxial transmission line.                                 |
|           | Day 43 | Continue...  |
|           | Day 44 | Continue.....  |
|           |        | <b>Sunday</b>  |
| <b>13</b> | Day 45 | Modes in rectangular wave guide                            |
|           | Day 46 | Continue.....  |
|           | Day 47 | Continue.....  |
|           | Day 48 | Energy flow and attenuation in wave guides                 |
|           | Day 49 | Continue.....  |
|           |        | <b>Sunday</b>  |
| <b>14</b> | Day 50 | Continue.....  |
|           | Day 51 | Rectangular resonant caves                                 |
|           | Day 52 | Continue.....  |
|           | Day 53 | Continue.....  |
|           |        | <b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b> |
|           |        | <b>Sunday/ Ramnavami</b>                                   |
| <b>15</b> | Day 54 | Planar optical wave guides Planar dielectric wave guide    |
|           | Day 55 | Continue.....  |
|           | Day 56 | Condition of continuity at interface                       |
|           |        | <b>Mahavir Jayanti</b>                                     |
|           | Day 57 | Continue.....  |

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Praveen

Class and Section: B.Sc. (HP) VI semester

Subject: Electromagnetic Theory-II

| Week | Date   | Topics  |
|------|--------|---|
| 16   |        | <b>Sunday</b>   |
|      | Day 58 | Phase shift on total reflection                                     |
|      | Day 59 | <b>Continue.....</b>  |
|      | Day 60 | Eigen value equations, phase and group velocity of the guided waves |
|      | Day 61 | Continue.....   |
|      | Day 62 | field energy and power transmission                                 |
|      |        | <b>Sunday</b>   |
| 17   | Day 63 | Assignment preparation  |
|      | Day 64 | Assignment preparation  |
|      | Day 65 | Discussion of important question related unit-I                     |
|      | Day 66 | Discussion of important question related unit-I                     |
|      | Day 67 | Discussion of important question related unit-I                     |
|      |        | <b>Dr. Ambedkar Jayanti/Vaisakhi</b>                                |
|      |        | <b>Sunday</b>   |
| 18   | Day 68 | Revision of basic concepts  |
|      | Day 69 | Numerical and problem   |
|      |        | <b>Parashurama Jayanti</b>  |
|      | Day 70 | Class test  |
|      | Day 71 | Result & discussion   |
|      |        |   |
|      |        | <b>Sunday</b>   |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURBHI

Class and Section: B.sc 6th sem (N.M) ,Sec -

Subject: Nuclear Physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | Day1      | Introduction   |
|      | Day2      | Nuclear mass and binding energy, nuclear size ,spin,parity |
|      | Day3      | Nuclear stability,Magnetic dipole moment                   |
|      |           |  |
|      |           |  |
|      | 7-Jan-18  | Sunday   |
| 2    | Day4      | Quadrupolmoment  |
|      | Day5      | Bain bridge, Bain bride Spectrograph                       |
|      | Day6      | Jordan mass spectrograph                                   |
|      |           |  |
|      |           |  |
|      | 14-Jan-18 | Sunday   |
| 3    | Day7      | Mosley law   |
|      | Day8      | Rutherford back scattering                                 |
|      | Day9      | Numerical problems & assignment 1                          |
|      |           |  |
|      |           |  |
|      | 21-Jan-18 | Sunday   |
| 4    | 22-Jan-18 | Introduction of alpha particles,                           |
|      | Day10     | Alpha disintegration,straggling and range                  |
|      | 24-Jan-18 | <u>Sir Chhotu Ram Jayanti</u>                              |
|      | Day11     | Energetics of alpha particles, Geiger nuttle law           |
|      | 26-Jan-18 | <u>Republic Day</u>  |
|      |           |  |
|      | 28-Jan-18 | Sunday   |
| 5    | Day12     | Beta particles, Origin of continuous beta spectrum         |
|      | Day13     | Types of beta decay, energetics of beta decay              |
|      | Day14     | Energy loss of beta particles                              |

## Lesson Plan

Name of the Assistant/ Associate Professor - SURBHI

Class and Section: B.sc 6th sem (N.M) ,Sec -

Subject: Nuclear Physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    |           |  |
|      |           |  |
|      |           |  |
|      | 4-Feb-18  | Sunday   |
| 2    | Day15     | Range of electrons, Absorption of beta particles |
|      | Day16     | doubts   |
|      | Day17     | Numerical problem                                |
|      |           |  |
|      |           |  |
|      | 10-Feb-18 | <u>Maharshi Dayanand Saraswati Jayanti</u>       |
|      | 11-Feb-18 | Sunday   |
| 3    | Day18     | Class test 1                                     |
|      | 13-Feb-18 | <u>Maha Shivratri</u>                            |
|      | Day19     | intoductin of Gamma rays                         |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 18-Feb-18 | Sunday   |
| 4    | Day20     | Interaction of gamma rays , nature of gamma rays |
|      | Day21     | Energetics of gamma rays                         |
|      | Day22     | Interaction of gamma rays with matter            |
|      |           |  |
|      |           |  |
|      |           |  |
|      | 25-Feb-18 | Sunday   |
| 5    | Day23     | Photoelectric effect                             |
|      | Day24     | Compton Effect                                   |
|      | Day25     | Pair production effect                           |

Lesson Plan

Name of the Assistant/ Associate Professor - SURBHI

Class and Section: B.sc 6th sem (N.M) ,Sec -

Subject: Nuclear physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Mar-18  | Guru Ravidas Birthday  |
|      | 2-Mar-18  | Holi   |
|      | 4-Mar-18  | Sunday   |
| 2    | Day26     | Annihilation   |
|      | Day27     | Absorption of gamma rays                                     |
|      | Day28     | Mass attenuation coefficient, application                    |
|      |           |  |
|      | 11-Mar-18 | Sunday   |
| 3    | Day29     | Mass attenuation coefficient, application                    |
|      | Day30     | Numerical problems & assignment 3                            |
|      | Day31     | revision   |
|      |           |  |
|      | 18-Mar-18 | Sunday   |
| 4    | Day32     | Numerical problems & assignment 4                            |
|      | Day33     | Doubts   |
|      | Day34     | Class test 2   |
|      |           |  |
|      | 23-Mar-18 | <u>Shaheedi Diwas of Bhagat Singh, Rajguru &amp; Sukhdev</u> |
|      |           |  |
|      | 25-Mar-18 | Sunday/ <u>Ram Navami</u>                                    |
| 5    | Day35     | Nuclear reactions, Elastic scattering, Inelastic scattering  |
|      | Day36     | Nuclear disintegration, photoneuclear reaction               |
|      | Day37     | Radiative capture, Direct reaction                           |
|      | 29-Mar-18 | <u>Mahavir Jayanti</u>                                       |
|      |           |  |

### **Lesson Plan**

Name of the Assistant/ Associate Professor - SURBHI

Class and Section: B.sc 6th sem (N.M) ,Sec -

Subject: Nuclear physics

| Week | Date      | Topics   |
|------|-----------|--|
| 1    | 1-Apr-18  | Sunday   |
|      | Day38     | heavy ion reactions and spallation Reactions,                                      |
|      | Day39     | conservation laws. Q-value and reaction threshold                                  |
|      | Day40     | Nuclear Reactors General aspects of Reactor design.                                |
|      |           |  |
|      |           |  |
|      | 8-Apr-18  | Sunday   |
| 2    | Day41     | Nuclear fission and fusion reactors<br>(Principles, construction, working and use. |
|      | Day42     | Linear accelerator, Tandem accelerator   |
|      | Day43     | Cyclotron and Betatron accelerators.   |
|      |           |  |
|      |           |  |
|      | 14-Apr-18 | <a href="#">Dr Ambedkar Jayanti</a> / <a href="#">Vaisakhi</a>                     |
|      | 15-Apr-18 | Sunday   |
| 3    | Day44     | Ionization chamber, proportional counter,  |
|      | Day45     | G.M. counter detailed study, scintillation counter                                 |
|      | 18-Apr-18 | <a href="#">Parashurama Jayanti</a>  |
|      | Day 46    | semiconductor detector   |
|      |           |  |
|      |           |  |
|      | 22-Apr-18 | Sunday   |
| 4    | Day47     | Doubts   |
|      | Day48     | Numerical problems & assignment 5  |
|      | Day49     | Syllabus complete  |
|      |           |  |
|      |           |  |