

GOVT COLLEGE HODAL, PALWAL

LESSON PLAN (SESSION 2021-22) EVEN SEMESTER

Class: B.Sc. IIND Sem(Even Semester)

Subject: *Physics*

Faculty: *MR. Ravi Riwariya*

| Months | Week 1 | Week 2 | Week 3 | Week 4 |
|--------------|---|--|--|---|
| March | Electromagnetic Induction: Growth and decay of current in a circuit with (a) Capacitance and resistance (b) Resistance and inductance. | (c) Capacitance and inductance (d) Capacitance resistance and inductance. | A.C. circuit analysis using complex variables with (a) Capacitance and resistance (b) Resistance and inductance. | (c) Capacitance and inductance (d) Capacitance, Inductance and Resistance Series and Parallel resonant circuit. Quality factor (Sharpness of resonance). |
| April | Semi-conductor Diodes: Energy bands in solids. Intrinsic and extrinsic semiconductor, Hall effect, P-N junction diode and their V-I characteristics. | Zener and avalanche breakdown, Resistance of a diode, Light emitting diodes (LED). Photo conduction in semiconductors, Photodiode, Solar cell. | Diode Rectifiers: P-N junction half wave and full wave rectifier. Types of filter circuits (L and- with theory). | Zener diode as voltage regulator, Simple regulated power supply. |
| May | Transistors: Junction transistors, Bipolar transistors, Working of NPN and PNP transistors. | Transistor connections (C-B, C-E, C-C mode), constants of transistor. Assignment & Presentation | Transistor characteristic curves (excluding h parameter analysis), and Monthly Test | Advantage of C-B configuration. C.R.O. (Principle, construction and working in detail) |
| June | Transistor Amplifiers: Transistor biasing, Methods of transistor biasing and stabilization. D.C. load line. Common-base and common-emitter transistor biasing Common-base, Common-emitter amplifiers. Classification of amplifiers. | Resistance capacitance (R-C) coupled amplifier (two stage; concept of band width, no derivation). | Feed-back in amplifiers, Advantage of negative feedback. Emitter follower. Oscillator: Oscillators, Principle of oscillation, Classification of Oscillator. | Condition for self sustained oscillation : Barkhausen criterion for oscillations. Tuned collector common emitter oscillator. Hartley oscillator. Culpri't's oscillator. |

Date:

Signature:



GOVT COLLEGE HODDAL, PALWAL

LESSON PLAN (SESSION 2021-22) EVEN SEMESTER

Class: B.Sc. 4th Sem(Even Semester)

Subject: *Physics*

Faculty: *MR. Ravi Riwariya*

| Months | Week 1 | Week 2 | Week 3 | Week 4 |
|--------------|---|--|---|--|
| March | Statistical Physics-I Probability, some probability considerations, | combinations possessing maximum probability, | Combinations possessing minimum probability, distribution of molecules in two boxes. | Case with weightage (General). Phase space, |
| April | microstates and microstates, statistical fluctuations | constraints and accessible States Thermodynamically probability | Statistical Physics-II Postulates of Statistical Physics. Division of Phase space into cells, | Condition of equilibrium between two systems in thermal contact. |
| May | B-Parameter. Entropy and Probability, Boltzmann's distribution law. | Evaluation of A and b. Bose-Einstein statistics, | Assignment & presentation | Application of B.E. Statistics to Planck's radiation law, B.E. gas. And Test |
| June | Statistical Physics-II Fermi-Dirac statistics, M.B. Law as limiting case of B.E. | Degeneracy and B.E., Condensation. | F.D. Gas, electron gas in metals. | Zero point energy. Specific heat of metals and its solution. |

Date:

Signature:

