

Lesson plan 2023-24
Physics Paper -1
Statistical Physics
B.Sc. 4th Sem
Amar Singh (Extension Lecturer)
SMSD GOVT COLLEGE NANGAL CHAUDHARY

3rd Week of January month

- Introduction of unit 1st (Statistical Physics-1)
- Probability, Permutations, Combination
- Some Probability considerations.
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4th week of January month

- Combinations possessing maximum probability
- Combinations possessing minimum Probability
- Numerical Problems

1st week of February month

- Distribution of molecules in two boxes
- Phase space, microstates and macrostates
- Statistical fluctuations

2nd week of February month

- Constraints and accessible States
- Thermodynamical Probability

3rd Week of February month

- Introduction of unit 2nd (Statistical Physics-II)
- Postulates of Statistical Physics
- Division of phase space into cells

4th week of February month

- Condition of equilibrium between two systems in thermal contact
- b- parameter, entropy and Probability

1st week of March month

- Boltzman's distribution law
- Evaluation of A and B
- Bose - Einstein Statistics

2nd week of March month

- Application of B.E. Statistics to Planck's Radiation Law
- Wien's law
- Rayleigh Zeeman's law

3rd Week of March month

- Bose -Einstein Gas
- Numerical Problems etc.
- Introduction of unit 3rd (Statistical Physics-III)

1st week of April month

- Fermi - Dirac Statistics
- M.B. law as a limiting case of B.E. Degeneracy

2nd week of April month

- B.E. condensation
- Fermi - Dirac gas and Degeneracy

3rd Week of April month

- Electron gas in metals
- Zero point energy
- Specific heat of metals and its solution

4th week of April month

- Revision

* LESSON PLAN *

1

SM & S GOVT COLLEGE, NANGAL CHOUDHARY
(M/GARH)

B.Sc. 2ND YEAR: 4TH SEMESTER

PAPER-I, (OPTICS-II)

DR. HEMANT KUMAR SHARMA (DEPARTMENT OF PHYSICS)
Session: 2023-24 (EVEN SEMESTER)

→ JAN-2024 (WEEK-1ST) (12 JAN TO 27 JAN)

- * INTERFERENCE BY DIVISION OF AMPLITUDE.
- * COLOUR OF THIN FILM.
- * WEDGE SHAPE FILM.

→ WEEK-2ND (29 JAN TO 03 FEB)

- * NEWTON'S RINGS
- * INTERFEROMETRES - MICHELSON'S.
- * FRESNEL'S DIFFRACTION.

→ FEB-2024 :- (WEEK-3RD) (05 FEB TO 10 FEB)

- * FRESNEL'S HALF PERIODS ZONES, ZONE PLATES.
- * DIFFRACTION AT A STRAIGHT EDGE.
- * RECTANGULAR SLITS
- * FRAUNHOFER DIFFRACTION.

→ WEEK-2ND (12 FEB TO 17 FEB)

- * TWO SLIT DIFFRACTION
- * N-SLIT DIFFRACTION
- * PLANE TRANSMISSION GRATING SPECTRUM (P.T.O.)

WEEK-3RD (19 FEB TO 24 FEB)

2.

DISPERSIVE POWER OF A GRATING.
LIMIT OF RESOLUTION

RAYLEIGH'S CRITERION.

* RESOLVING POWER OF TELESCOPE.

⇒ WEEK-4th (26 FEB TO 02 MARCH)

* RESOLVING POWER OF A GRATING.

* POLARIZATION

* POLARIZATION AND DOUBLE REFRACTION.

* POLARISATION BY REFLECTION.

⇒ MARCH - 2024 (WEEK-1st) (04 MARCH TO 09 MARCH)

* POLARISATION BY SCATTERING.

* MALUS LAW.

* PHENOMENON OF DOUBLE REFRACTION.

⇒ WEEK-2ND (18 MARCH TO 22 MARCH)

* HUYGEN'S WAVE THEORY OF DOUBLE REFRACTION

* NORMAL AND OBLIQUE INCIDENCE.

* ANALYSIS OF POLARISED LIGHT

⇒ APRIL - 2024 (WEEK-1st) (01 APRIL TO 06 APRIL)

* NICOL PRISM

* QUARTER WAVE PLATE.

* HALF WAVE PLATES

* PRODUCTION AND DETECTION OF PLANE POLARISED LIGHT (P.T.O.)

EK-2ND [08 APRIL TO 13 APRIL]

3

PRODUCTION AND DETECTION OF CIRCULARLY POLARISED LIGHT.

PRODUCTION AND DETECTION OF ELLIPTICALLY POLARISED LIGHT.

⇒ WEEK-3RD [15 APRIL TO 20 APRIL]

* OPTICAL ACTIVITY

* FRESNEL'S THEORY OF ROTATION.

* SPECIFIC ROTATION.

* POLARIMETERS (HALF SHADE & BIQUARTZ)

⇒ WEEK-4TH [21 APRIL TO ONWARDS]

* REVISION AND CLASS TEST

Hemant