SM.SD GOVT. COLLEGE, NANGAL CHOUDHARY 1.
(MIGARH)

LESSON PLAN FOR SESSIONS :- 2022-23 (Even Semester)

NAME :- DR. HEMANT KUMAR SHARMA
CLASS :- B.SC. IIIrd year (6th Semester)
SUBJECT :- PHYSICS (PAPER-IInd)

⇒ Jan - 2023 :-

⇒ WEEK - 1st [17 Jan to 21 Jan] [UNIT - I]

* Nuclear mass and binding energy.
* Systematics binding energy.
* Nuclear stability.

⇒ WEEK - 2nd [23 Jan to 28 Jan]

* Nuclear size, Spin, Pairty.
* Statistics, Magnetic dipole Moment.
* Quadrupole Moment (Shape Concept).

⇒ Week - 3rd [30 Jan & 31 Jan]

* Determination of mass Bain - Bridge & Jordan mass spectrograph.
* Determination of charge by Mosley law.

⇒ Feb - 2023 :-

⇒ WEEK - 1st [01 Feb to 04 Feb]

* Determination of size of nuclei by Rutherford back Scattering.

⇒ Week - 2nd [06 Feb to 11 Feb] [Unit - IInd]

* Interaction of heavy Charged particles.
* Alpha disintegration and its theory.
* Energy loss of heavy Charged particle.

(P.T.O.)

Feb:-2023:-

Week-3rd [13 Feb to 18 Feb]

* Energetics of alpha-decay.
* Range and Straggling of α-particles.
* Geiger-Nuttal law.

=> Week-4th [20 Feb to 25 Feb]

* Introduction of light charged particles (Beta-particle).
* Origin of Continuous beta-spectrum (Neutrino-hypothesis)
* Types of beta decay.

=> Week-5th [27 Feb & 28 Feb]

* Energy loss of beta-particles (ionization)
* Range of electrons.
* Absorption of beta particles.

=> March:-2023:-

=> Week-1st [01 march to 04 march] *

* Interaction of Gamma Ray.
* Nature of gamma rays.
* Energetics of gamma rays.

=> Week-2nd [06 March to 11 March]

* HOLI VACATION *

=> Week-3rd. [13 March to 18 March]:-

=> Passage of Gamma Radiations through matter.

=> Electron-position annilation.

=> Absorption of gamma rays and its application.

(P.T.O)

⇒ March - 2023 :-

Week - 4th [20 march to 25 march] [Unit - III]

* Nuclear reactions.
* Elastic Scattering, inelastic scattering.
* Nuclear disintegration.

⇒ week - 5th [27 march to 31 march]. *

* Photonuclear reaction.
* Radiative capatures.
* Direct reaction.
* Heavy Ion reactions.

⇒ April - 2023 [Unit - III]

⇒ week - 1st [01 April to 08 April]

* Spallation Reactions.
* Conservation laws.
* Q - value.

⇒ week - 2nd [10 April to 15 April]

* Threshold reaction.
* Nuclear reactor.
* General aspects Reactor design.
* Nuclear fission and fusion reactors.

⇒ week - 3rd [17 April to 22 April]

* Linear accelerator, Tendem accelerator.
* cyclotron and Betatron accelerators.
* Ionization Chamber.

⇒ week - 4th [24 April to 30 April]

* Proportional Counter.
* G.M. Counter.
* Scintillation Counter.
* Semiconductor detector.

⇒ May - 2023 [week - 1]. [from 01 May to 06 May]

* Revision & Class Test *