

# GOVT. SHIVALIK COLLEGE NAYA NANGAL

Teaching Plan (Session 2023-24)

Class- B.Sc. III (SEM V)

Teacher Name- Sunita Saini

Subject-Physics

Period No. 6

Name of Paper – Nuclear and Radiation Physics

Sr. No.	Date	Topics to be covered
1.	1-5 Aug	<b>Section – A</b> Constituents of nucleus and their intrinsic properties.
2.	7-12 Aug	Qualitative facts about size, mass, density, energy, charge. Binding energy, angular momentum. <b>Group Discussion about covered topics</b>
3.	14-19 Aug	Magnetic moment and electric quadruple moments of the nucleus. <b>Class Test</b> <b>Topic</b> - Constituents of nucleus and their intrinsic properties.
4.	21-26 Aug	Wave mechanical properties of nucleus, average binding energy and its variation with mass numbers, Properties of nuclear forces.
5.	28Aug -2 Sep	Non existence of electrons in the nucleus and neutron-proton model. <b>PPT On Topic</b> - Binding energy and its variation, Nuclear shell model.
7.	4 – 9 Sep	Liquid drop model and semi empirical mass formula, Conditions of nuclear stability.
8.	11-16 Sep	Fermi gas model. Experimental evidence of magic numbers and its explanation. <b>Class Test</b> <b>Topic</b> - Liquid drop model and semi empirical mass formula.
9.	18 - 23 Sep	<b>SECTION B</b> Radioactivity. Modes of decay and successive radioactivity. <b>Assignment on Topic</b> - Alpha emission. Electron emission.(BOYS) Positron emission, Electron capture.(GIRLS)
10.	25-30 Sep	Qualitative discussion of alpha, beta and gamma spectra, Geiger-Nuttal rule.
11.	2-7 Oct	Neutrino hypothesis of beta decay. Evidence of existence of neutrino.
12.	9-14 Oct	<b>PPT by Students on Topic</b> Nuclear shell model, Alpha

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		emission. Electron emission, Positron emission, Electron capture.
13.	16-21 Oct	Gamma-ray emission, Internal conversion.
14.	23-28 Oct	<b>MST</b>
15.	30 Oct-4 Nov	Qualitative discussion of alpha and beta decay theories.
16.	6-11 Nov	Nuclear reactions. Reaction cross section.
17.	13-18 Nov	Conservation laws. Kinematics of nuclear Reaction. <b>Class Test</b> <b>Topic - Kinematics of nuclear Reaction</b>
18.	20-25 Nov	Q-value and its physical significance, Compound nucleus, Possible reaction with high energy particles.
19.	27Nov- 2 Dec	<b>Group Discussion on Important Topics.</b> <b>REVISION</b>