

Lesson Plan

Name of the Associate Professor- Mr. Sashi

Subject- Physics

Lesson Plan- 17 Weeks (January-April 2018)

Week	Date	Class B.Sc.-III YEAR (Sec-C)	Class B.SC.-III YEAR (Sec-A)
1.	1-Jan-18	Introduction of early observations, emission and absorption spectra, atomic spectra	
	2-Jan-18	Wave number, spectrum of Hydrogen atom in Balmer series, Bohr atomic model(Bohr's postulates	
	3-Jan-18	spectra of Hydrogen atom , explanation of spectral series in Hydrogen atom, un-quantized states and continuous spectra	
	4-Jan-18		Introduction of early observations, emission and absorption spectra, atomic spectra
	5-Jan-18	Holiday	
	6-Jan-18		spectra of Hydrogen atom , explanation of spectral series in Hydrogen atom, un-quantized states and continuous spectra
	7-Jan-18	Sunday	
2.	8-Jan-18	spectral series in absorption spectra, effect of nuclear motion on line spectra (correction of finite nuclear mass)	
	9-Jan-18	variation in Rydberg constant due to finite mass, short comings of Bohr's theory	
	10-Jan-18	Wilson sommerfeld quantization rule, de-Broglie interpretation of Bohr quantization law, Bohr's corresponding principle	
	11-Jan-18		spectra of Hydrogen atom , explanation of spectral series in Hydrogen atom, un-quantized states and continuous spectra
	12-Jan-18		variation in Rydberg constant due to finite mass, short comings of Bohr's theory
	13-Jan-18		Wilson sommerfeld quantization rule, de-Broglie interpretation of Bohr quantization law, Bohr's corresponding principle
	14-Jan-18	Sunday	
3.	15-Jan-18	Sommerfeld's extension of Bohr's model, Sommerfeld relativistic correction, Short comings of Bohr-Sommerfeld theory	

	16-Jan-18	Vector atom model; space quantization, electron spin, coupling of orbital and spin angular momentum	
	17-Jan-18	spectroscopic terms and their notation, quantum numbers associated with vector atom model,	
	18-Jan-18		Sommerfeld's extension of Bohr's model, Sommerfeld relativistic correction, Shortcomings of Bohr-Sommerfeld theory
	19-Jan-18		Vector atom model; space quantization, electron spin, coupling of orbital and spin angular momentum
	20-Jan-18		spectroscopic terms and their notation, quantum numbers associated with vector atom model,
	21-Jan-18	Sunday	
4.	22-Jan-18	Vasant Panchami	
	23-Jan-18	spectroscopic terms and their notation, quantum numbers associated with vector atom model,	
	24-Jan-18	Sir Chotu Ram Jayanti	
	25-Jan-18		transition probability and selection rules
	26-Jan-18	Republic Day	
	27-Jan-18		Sommerfeld's extension of Bohr's model
	28-Jan-18	Sunday	
5.	29-Jan-18	Sommerfeld's extension of Bohr's model	
	30-Jan-18	Orbital magnetic dipole moment (Bohr magneton), behavior of magnetic dipole in external magnetic field;	
	31-Jan-18	Guru Ravi Das Birthday	
	1-Feb-18		Unit Test -1
	2-Feb-18		Orbital magnetic dipole moment (Bohr magneton), behavior of magnetic dipole in external magnetic field
	3-Feb-18		Larmor's precession and theorem, Penetrating and Non-penetrating orbits
	4-Feb-18	Sunday	
6.	5-Feb-18	Larmor's precession and theorem, Penetrating and Non-penetrating orbits	
	6-Feb-18	Penetrating orbits on the classical model; Quantum defect	
	7-Feb-18	Spin orbit interaction energy of the single valence electron, spin orbit interaction for penetrating and non-penetrating orbits	
	8-Feb-18		Penetrating orbits on the classical model; Quantum defect
	9-Feb-18		Spin orbit interaction energy of the

			single valance electron
	10-Feb-18	Maharishi Dayanand Saraswati Jayanti	
	11-Feb-18	Sunday	
7.	12-Feb-18	quantum mechanical relativity correction, Hydrogen fine spectra	
	13-Feb-18	Maha Shivratri	
	14-Feb-18	Main features of Alkali Spectra and their theoretical interpretation, term series and limits, Rydeburg-Ritze combination principle Absorption spectra atoms of Alkali.	
	15-Feb-18		spin orbit interaction for penetrating and non-penetrating orbits
	16-Feb-18		quantum mechanical relativity correction, Hydrogen fine spectra
	17-Feb-18		Main features of Alkali Spectra and their theoretical interpretation, term series and limits, Rydeburg-Ritze combination principle
	18-Feb-18	Sunday	
8.	19-Feb-18	observed doublet fine structure in the spectra of alkali metals and its Interpretation, Intensity rules for doublets, comparison of Alkali spectra and Hydrogen spectrum	
	20-Feb-18	Essential features of spectra of Alkaline-earth elements	
	21-Feb-18	Vector model for two valance electron atom: application of spectra.	
	22-Feb-18		Absorption spectra of Alkali atoms. observed doublet fine structure in the spectra of alkali metals and its Interpretation,
	23-Feb-18		, Intensity rules for doublets, comparison of Alkali spectra and Hydrogen spectrum
	24-Feb-18		Unit Test 2
	25-Feb-18	Sunday	
9.	26-Feb-18	Coupling Schemes;LS or Russell – Saunders Coupling Scheme	
	27-Feb-18	JJ coupling scheme,Interaction energy in L-S coupling (sp, pd configuration)	
	28-Feb-18	Holiday	
	1-Mar-18	Holiday	
	2-Mar-18	Holiday(HOLI)	
	3-Mar-18	Holiday	
	4-Mar-18	Sunday	
10.	5-Mar-18	Lande Interval rule, Pauli principal and periodic classification of the elements.	
	6-Mar-18	Interaction energy in JJ Coupling (sp, pd configuration),	

	7-Mar-18	equivalent and non-equivalent electrons	
	8-Mar-18		Essential features of spectra of Alkaline-earth elements
	9-Mar-18		Vector model for two valence electron atom: application of spectra.
	10-Mar-18		Coupling Schemes;LS or Russell – Saunders Coupling Scheme
	11-Mar-18	Sunday	
11.	12-Mar-18	Two valence electron system-spectral terms of non-equivalent and equivalent electrons	
	13-Mar-18	Comparison of spectral terms in L-S And J-J coupling. Hyperfine structure of spectral lines and its origin	
	14-Mar-18	Isotope effect, nuclear spin	
	15-Mar-18		JJ coupling scheme,Interaction energy in L-S coupling (sp, pd configuration)
	16-Mar-18		Lande Interval rule, Pauli principal and periodic classification of the elements.
	17-Mar-18		Interaction energy in JJ Coupling (sp, pd configuration),
	18-Mar-18	Sunday	
12.	19-Mar-18	Comparison of spectral terms in L-S And J-J coupling	
	20-Mar-18	Zeeman Effect (normal and Anomalous)	
	21-Mar-18	Experimental set-up for studying Zeeman effect	
	22-Mar-18		equivalent and non-equivalent electrons
	23-Mar-18	Shaheedi Diwas	
	24-Mar-18		Two valence electron system-spectral terms of non-equivalent and equivalent electrons
	25-Mar-18	Sunday	
13.	26-Mar-18	Explanation of normal Zeeman effect(classical and quantum mechanical)	
	27-Mar-18	Explanation of anomalous Zeeman effect(Lande g-factor	
	28-Mar-18	Zeeman pattern of D1 and D2 lines of Na atom, Paschen-Back effect of a single valence electron system	
	29-Mar-18	Mahavir Jayanti	
	30-Mar-18		Comparison of spectral terms in L-S And J-J coupling. Hyperfine structure of spectral lines and its origin
	31-Mar-18		Isotope effect, nuclear spin
	1-Apr-18	Sunday	
14.	2-Apr-18	Weak field Stark effect of Hydrogen atom	
	3-Apr-18	General Considerations, Electronic States of Diatomic Molecules	
	4-Apr-18	General Considerations, Electronic States	

		of Diatomic Molecules	
	5-Apr-18		Comparison of spectral terms in L-S And J-J coupling
	6-Apr-18		Zeeman Effect (normal and Anomalous) ,Experimental set-up for studying Zeeman effect
	7-Apr-18		Explanation of normal and anomalous Zeeman effect(classical and quantum mechanical), Lande g-factor
	8-Apr-18	Sunday	
15.	9-Apr-18	Rotational Spectra in Microwave region	
	10-Apr-18	Vibrational Spectra (IR Region), Rotator Model of Diatomic Molecule	
	11-Apr-18	Raman Effect Introduction,classical theory of Raman effect	
	12-Apr-18		Zeeman pattern of D1 and D2 lines of Na atom, Paschen-Back effect of a single valence electron system
	13-Apr-18		Weak field Stark effect of Hydrogen atom, General Considerations, Electronic States of Diatomic Molecules
	14-Apr-18	Dr. Ambedkar Jayanti / Vaisakhi	
	15-Apr-18	Sunday	
16.	16-Apr-18	Quantum mechanical treatment of Raman effect	
	17-Apr-18	Electronic spectra of Raman effect	
	18-Apr-18	Parashurama Jayanti	
	19-Apr-18		Rotational Spectra in Infra-Red region, Rotational Spectra in Microwave region
	20-Apr-18		Vibrational Spectra (IR Region), Rotator Model of Diatomic Molecule
	21-Apr-18		Raman Effect,classical and quantum mechanical treatment of Raman effect ,spectra
	22-Apr-18	Sunday	
17.	23-Apr-18	Unit 1-Test	
	24-Apr-18	Revision of unit 1&2nd	
	25-Apr-18	Revision of unit 2&3rd	
	26-Apr-18		Unit test -4
	27-Apr-18		Revision of unit 1 &2
	28-Apr-18		Revision of unit 3&4
	29-Apr-18	Sunday	