

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Seema Saurha
 CLASS AND SECTION B.Sc. 2nd sem (Physics)
 SUBJECT Electromagnetic induction and Electronic devices.

WEEK 1	DESCRIPTION
1.01.24	Growth and decay of current in a ckt
2.01.24	Capacitance & Resistance
3.01.24	"
4.01.24	Resistance and Inductance
5.01.24	"
6.01.24	Capacitance and inductance
WEEK 2	
8.01.24	Capacitance resistance and inductance
9.01.24	"
10.01.24	"
11.01.24	AC ckt analysis using complex variables
12.01.24	"
13.01.24	"
WEEK 3	
15.01.24	Capacitance & Resistance
16.01.24	"
18.01.24	Resistance & inductance
19.01.24	"
20.01.24	Capacitance & Inductance
WEEK 4	
22.01.24	Series & parallel resonant ckt
23.01.24	"
24.01.24	"
25.01.24	Quality factor
27.01.24	"
WEEK 5	
29.01.24	Sharpness of resonance
30.01.24	"
31.01.24	Revision
01.02.24	last lecture
02.02.24	"
03.02.24	Numerical Practice.

WEEK 6	DESCRIPTION
05.02.24	Semiconductor diodes
06.02.24	Energy Bands in solids
07.02.24	"
08.02.24	Intrinsic and extrinsic semiconductors
09.02.24	"
10.02.24	Hall effect
WEEK 7	
12.02.24	P-N junction diode
13.02.24	"
15.02.24	V-I characteristics
16.02.24	Zener & avalanche breakdown
17.02.24	"
WEEK 8	
19.02.24	Resistance of a diode
20.02.24	LED
21.02.24	Photo conduction
22.02.24	Semiconductors
23.02.24	"
24.02.24	Photo diode, solar cell
WEEK 9	
26.02.24	P-N Junction
27.02.24	Half & full wave Rectifier.
28.02.24	"
29.02.24	Types of filter ckt
01.03.24	Zener diode as voltage Regulator
02.03.24	simple regulated power supply.
WEEK 10	
04.03.24	Transistor
05.03.24	Junction Transistor
06.03.24	Bipolar Transistor
07.03.24	"
09.03.24	Working of NPN & PNP transistor
WEEK 11	
11.03.24	Transistor connection
12.03.24	"
13.03.24	Constant of transistor
14.03.24	"
15.03.24	Transistor characteristic Curves
16.03.24	"
WEEK 12	
18.03.24	Advantage of C-B Configuration
19.03.24	"
20.03.24	C.R.O
21.03.24	"
22.03.24	Revision

WEEK 13		DESCRIPTION
		----- HOLI BREAK -----
WEEK 14		
01.04.24		Transistor Amplifier
02.04.24		"
03.04.24		Transistor Biasing
04.04.24		method of transistor Biasing & stabilization
05.04.24		"
06.04.24		"
WEEK 15		
08.04.24		D.C. load line, C-B & C-E transistor Biasing
09.04.24		"
10.04.24		C-B & C-E amplifiers
12.04.24		"
13.04.24		R-C coupled amplifier
WEEK 16		
15.04.24		Feed-back in amplifiers.
16.04.24		"
18.04.24		Oscillators
19.04.24		"
20.04.24		Principle of Oscillation
WEEK 17		
22.04.24		Classification of Oscillators
23.04.24		Condition of self sustained oscillation
24.04.24		Barkhausen Criterion for oscillator
25.04.24		Tuned collector common emitter oscillator
26.04.24		Hartley oscillator, Colpitts oscillator
27.04.24		" Revision

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Seema Sarda
 CLASS AND SECTION B.Sc. 2nd sem (Physics)
 SUBJECT Properties of matter, Kinetic theory & Relativity

WEEK 1	DESCRIPTION
1.01.24	Elasticity
2.01.24	"
3.01.24	Hooke's law
4.01.24	Elastic constants and their relations
5.01.24	"
6.01.24	"
WEEK 2	
8.01.24	Poisson's Ratio
9.01.24	"
10.01.24	"
11.01.24	Torsion of cylinder
12.01.24	twisting couple
13.01.24	"
WEEK 3	
15.01.24	Revsion
16.01.24	"
18.01.24	Bending of Beam
19.01.24	"
20.01.24	"
WEEK 4	
22.01.24	Cantilevers
23.01.24	"
24.01.24	"
25.01.24	Centrally loaded Beams
27.01.24	"
WEEK 5	
29.01.24	Doubt lecture
30.01.24	"
31.01.24	"
01.02.24	Numerical Practice
02.02.24	"
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	Assumption of kinetic theory of Gases
06.02.24	
07.02.24	
08.02.24	Law of equipartition of energy
09.02.24	
10.02.24	
10.02.24	Application for specific heat of Gases
WEEK 7	
12.02.24	Maxwell distribution of speeds
13.02.24	
15.02.24	
16.02.24	Experimental Verification of Maxwell's Law
17.02.24	
17.02.24	
WEEK 8	
19.02.24	Most Probable speed
20.02.24	
21.02.24	
22.02.24	Average & r.m.s
23.02.24	
24.02.24	
24.02.24	speed mean free path
WEEK 9	
26.02.24	Transport of energy and momentum
27.02.24	
28.02.24	
29.02.24	diffusion of gases
01.03.24	
02.03.24	
02.03.24	Brownian motion, Real gases
WEEK 10	
04.03.24	Vander Waals eq ⁿ .
05.03.24	
06.03.24	
07.03.24	Numerical Practice
09.03.24	
WEEK 11	
11.03.24	Doubt lecture
12.03.24	
13.03.24	
14.03.24	Seminar
15.03.24	
16.03.24	
16.03.24	Test
WEEK 12	
18.03.24	Reference systems
19.03.24	
20.03.24	
21.03.24	Inertial frames
22.03.24	

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Galilean Invariance
02.04.24	"
03.04.24	Conservation Laws
04.04.24	"
05.04.24	Newtonian relativity Principle
06.04.24	"
WEEK 15	
08.04.24	Michelson - Morley Experiment
09.04.24	"
10.04.24	Search of ether.
12.04.24	"
13.04.24	"
WEEK 16	
15.04.24	Lorentz transformation length contraction
16.04.24	"
18.04.24	"
19.04.24	Time dilation
20.04.24	"
WEEK 17	
22.04.24	Velocity addition theorem
23.04.24	"
24.04.24	Variation of mass with velocity
25.04.24	"
26.04.24	Mass energy equivalence
27.04.24	Resistor.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Anjali³

CLASS AND SECTION B.S.C. 4th sem Physics

SUBJECT Statistical Physics

WEEK 1	DESCRIPTION
1.01.24	Microscopic and Macroscopic systems events - mutually exclusive dependent and independent Probability, statistical Probability A Priori probability & relation b/w them
2.01.24	
3.01.24	
4.01.24	
5.01.24	
6.01.24	
WEEK 2	
8.01.24	Probability Theorem
9.01.24	Some Probability consideration
10.01.24	"
11.01.24	"
12.01.24	Permutation and combination
13.01.24	distinguishable & indistinguishable
WEEK 3	
15.01.24	Micro and macro state
16.01.24	"
18.01.24	Thermodynamical Probability
19.01.24	"
20.01.24	Constraint and accessible state
WEEK 4	
22.01.24	Statistical fluctuation
23.01.24	"
24.01.24	General distribution of distinguishable particles
25.01.24	"
27.01.24	condition of equilibrium b/w two systems
WEEK 5	
29.01.24	Entropy
30.01.24	"
31.01.24	Probability
01.02.24	"
02.02.24	Boltzmann's Relation
03.02.24	Revision.

WEEK 6	DESCRIPTION
05.02.24	Postulates of statistical Physics
06.02.24	"
07.02.24	Phase space
08.02.24	Division of phase space into cells
09.02.24	"
10.02.24	"
WEEK 7	
12.02.24	Three kind of statistics.
13.02.24	"
15.02.24	Basic approach in three statistics.
16.02.24	"
17.02.24	"
WEEK 8	
19.02.24	M-B statistics applied to an ideal gas
20.02.24	"
21.02.24	evaluation of α & β
22.02.24	"
23.02.24	speed distribution law and velocity law.
24.02.24	"
WEEK 9	
26.02.24	Expression for average speed
27.02.24	"
28.02.24	R.M.S speed.
29.02.24	"
01.03.24	Average velocity, r.m.s. velocity.
02.03.24	"
WEEK 10	
04.03.24	most Probable energy
05.03.24	"
06.03.24	"
07.03.24	mean energy for Maxwellian distribution
09.03.24	"
WEEK 11	
11.03.24	Revision
12.03.24	"
13.03.24	Numerical Practice
14.03.24	"
15.03.24	Doubt lecture
16.03.24	"
WEEK 12	
18.03.24	Need for Quantum statistics
19.03.24	"
20.03.24	Bose Einstein distribution law
21.03.24	Application of B.E statistics
22.03.24	"

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Degeneracy and B.E Condensation
02.04.24	"
03.04.24	Fermi Dirac Energy distribution Law
04.04.24	"
05.04.24	Fermi Dirac gas and degeneracy.
06.04.24	"
WEEK 15	
08.04.24	Fermi energy & Fermi Temp.
09.04.24	"
10.04.24	Fermi Dirac Energy distribution law
12.04.24	"
13.04.24	"
WEEK 16	
15.04.24	Zero point energy
16.04.24	zero point pressure & average speed
18.04.24	"
19.04.24	Specific heat anomaly of metals & col ⁿ
20.04.24	"
WEEK 17	
22.04.24	M.B distribution as a limiting case of B.E
23.04.24	"
24.04.24	F.D. distribution
25.04.24	"
26.04.24	Comparison of these statistics
27.04.24	"

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Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Anjali

CLASS AND SECTION B.S.C. 4th sem Physics

SUBJECT Statistical Physics

WEEK 1	DESCRIPTION
1.01.24	Microscopic and Macroscopic systems
2.01.24	
3.01.24	events - mutually exclusive dependent and independent
4.01.24	
5.01.24	Probability, statistical Probability A Priori probability & relation b/w them
6.01.24	
WEEK 2	
8.01.24	Probability theorem
9.01.24	Some Probability consideration
10.01.24	"
11.01.24	"
12.01.24	Permutation and combination distinguishable & indistinguishable
13.01.24	
WEEK 3	
15.01.24	Micro and macro state
16.01.24	"
18.01.24	Thermodynamical Probability
19.01.24	"
20.01.24	Constraint and accessible state
WEEK 4	
22.01.24	statistical fluctuation
23.01.24	"
24.01.24	General distribution of distinguishable particle
25.01.24	
27.01.24	condition of equilibrium b/w two system
WEEK 5	
29.01.24	Entropy
30.01.24	"
31.01.24	Probability
01.02.24	"
02.02.24	Boltzmann's Relation
03.02.24	Revision.

WEEK 6	DESCRIPTION
05.02.24	Postulates of statistical Physics
06.02.24	"
07.02.24	Phase space
08.02.24	Division of phase space into cells
09.02.24	"
10.02.24	"
WEEK 7	
12.02.24	Three kind of statistics.
13.02.24	"
15.02.24	Basic approach in three statistics.
16.02.24	"
17.02.24	"
WEEK 8	
19.02.24	M-B statistics applied to an ideal gas
20.02.24	"
21.02.24	evaluation of α & β
22.02.24	"
23.02.24	speed distribution law and velocity law.
24.02.24	"
WEEK 9	
26.02.24	Expression for average speed
27.02.24	"
28.02.24	R.M.S speed.
29.02.24	"
01.03.24	average velocity, r.m.s. velocity.
02.03.24	"
WEEK 10	
04.03.24	most Probable energy
05.03.24	"
06.03.24	"
07.03.24	mean energy for Maxwellian distribution
09.03.24	"
WEEK 11	
11.03.24	Revision
12.03.24	"
13.03.24	Numerical Practice
14.03.24	"
15.03.24	Doubt lecture
16.03.24	"
WEEK 12	
18.03.24	Need for Quantum statistics
19.03.24	"
20.03.24	Bose Einstein distribution law
21.03.24	Application of B.E statistics
22.03.24	"

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Degeneracy and B.E Condensation
02.04.24	"
03.04.24	Fermi Dirac Energy distribution Law
04.04.24	"
05.04.24	Fermi Dirac gas and degeneracy.
06.04.24	"
WEEK 15	
08.04.24	Fermi energy & Fermi Temp.
09.04.24	"
10.04.24	Fermi Dirac Energy distribution law
12.04.24	"
13.04.24	"
WEEK 16	
15.04.24	Zero point energy
16.04.24	Zero point pressure & average speed
18.04.24	"
19.04.24	Specific heat anomaly of metals & sol ⁿ
20.04.24	"
WEEK 17	
22.04.24	M.B distribution as a limiting case of B.E
23.04.24	"
24.04.24	F.D. distribution
25.04.24	"
26.04.24	Comparison of these statistics
27.04.24	"

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. JYOTI
 CLASS AND SECTION B.Sc.(E) Physics I
 SUBJECT Atomic, Molecular And Laser Physics

WEEK 1	DESCRIPTION
1.01.24	Introduction of Unit-I
2.01.24	vector Atom Model
3.01.24	" "
4.01.24	" "
5.01.24	Quantum numbers associated with
6.01.24	vector atom model
WEEK 2	
8.01.24	Penetrating and non-penetrating
9.01.24	orbits (qualitative description)
10.01.24	" "
11.01.24	spectral lines in different series
12.01.24	of alkali spectra
13.01.24	" "
WEEK 3	
15.01.24	spin orbit interaction
16.01.24	" "
18.01.24	doublet term separation
19.01.24	LS
20.01.24	" "
WEEK 4	
22.01.24	Russel - Saunders Coupling.
23.01.24	" "
24.01.24	" "
25.01.24	Revision
27.01.24	Test
WEEK 5	
29.01.24	Jj coupling
30.01.24	" "
31.01.24	" "
01.02.24	Example of jj coupling.
02.02.24	Test
03.02.24	Example of LS coupling.

DESCRIPTION	
WEEK 6	
05.02.24	Introduction of Unit - II
06.02.24	Zeeman effect
07.02.24	Normal " "
08.02.24	Anomalous Zeeman effect
09.02.24	" "
10.02.24	Examples
WEEK 7	
12.02.24	Zeeman pattern of D_1 lines
13.02.24	" "
15.02.24	Zeeman pattern of D_2 lines
16.02.24	of Sodium atom (Na)
17.02.24	" "
WEEK 8	
19.02.24	Paschen Back effect of a
20.02.24	single valence electron system
21.02.24	" "
22.02.24	" "
23.02.24	Weak field Stark effect of Hydrogen atom
24.02.24	" "
WEEK 9	
26.02.24	Discrete set of Electronic energies
27.02.24	of Molecules
28.02.24	" "
29.02.24	Quantisation of vibrational and
01.03.24	rotational energies Raman effect
02.03.24	" "
WEEK 10	
04.03.24	Test
05.03.24	Stoke's and anti Stoke's lines
06.03.24	" "
07.03.24	Examples
09.03.24	Test of unit - II complete
WEEK 11	
11.03.24	Introduction of unit - III
12.03.24	Main features of a laser.
13.03.24	Directionality
14.03.24	High Intensity
15.03.24	High degree of coherence
16.03.24	" "
WEEK 12	
18.03.24	Spatial and temporal coherence
19.03.24	" "
20.03.24	Einstein's coefficients
21.03.24	" "
22.03.24	Possibility of Amplification

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	momentum transfer
02.04.24	" "
03.04.24	life time of α level
04.04.24	kinetics of optical absorption
05.04.24	" "
06.04.24	Revision
WEEK 15	
08.04.24	Threshold condition for laser
09.04.24	emission
10.04.24	laser pumping
12.04.24	" "
13.04.24	He-Ne laser
WEEK 16	
15.04.24	Ruby laser
16.04.24	Principle, construction and
18.04.24	working.
19.04.24	Revision
20.04.24	Test
WEEK 17	
22.04.24	Applications of laser in the
23.04.24	field of medicine and industry
24.04.24	" "
25.04.24	Revision
26.04.24	Test
27.04.24	

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Jyoti
 CLASS AND SECTION B.Sc. (F) Physics Paper II
 SUBJECT Nuclear physics

WEEK 1	DESCRIPTION
1.01.24	Nuclear mass Binding energy systematics nuclear binding energy
2.01.24	
3.01.24	
4.01.24	
5.01.24	Nuclear stability
6.01.24	Nuclear size
WEEK 2	
8.01.24	Spin parity statistics magnetic dipole moment
9.01.24	
10.01.24	
11.01.24	
12.01.24	
13.01.24	Quadrupole moment (shape concept)
WEEK 3	
15.01.24	Determination of mass by Bain - Bridge
16.01.24	
18.01.24	
19.01.24	Bain - Bridge and Jordan mass spectrograph.
20.01.24	
WEEK 4	
22.01.24	Revision
23.01.24	Test
24.01.24	Determination of charge by Mesley law
25.01.24	
27.01.24	Determination of size of nuclei
WEEK 5	
29.01.24	By Rutherford Back. scattering
30.01.24	
31.01.24	Revision
01.02.24	Test
02.02.24	Introduction of Unit - II Interaction of heavy charged particle
03.02.24	

WEEK 6	DESCRIPTION
05.02.24	Alpha particles
06.02.24	"
07.02.24	alpha disintegration and its theory.
08.02.24	"
09.02.24	Energy loss of heavy charged particles
10.02.24	"
WEEK 7	
12.02.24	Energetics of alpha-decay
13.02.24	Range and straggling of alpha
15.02.24	particles.
16.02.24	Geiger-Muttal law.
17.02.24	" "
WEEK 8	
19.02.24	Introduction of light charged particle
20.02.24	origin of continuous beta spectrum
21.02.24	types of beta decay and
22.02.24	energetics of beta decay.
23.02.24	"
24.02.24	Energy loss of beta-particles
WEEK 9	
26.02.24	ionization
27.02.24	Range of electrons
28.02.24	Absorption of beta particles
29.02.24	" "
01.03.24	Penisis
02.03.24	Test
WEEK 10	
04.03.24	Interaction of Gamma Ray
05.03.24	Nature of Gamma rays
06.03.24	Energetics of gamma rays
07.03.24	passage of gamma radiations
09.03.24	" " " "
WEEK 11	
11.03.24	through matter.
12.03.24	photoelectric, Compton and
13.03.24	pair production effects
14.03.24	" "
15.03.24	Electron positron annihilation
16.03.24	Absorption of Gamma rays
WEEK 12	
18.03.24	and its application
19.03.24	Test
20.03.24	Introduction of Unit - III
21.03.24	Nuclear reactions
22.03.24	" "

WEEK 13		DESCRIPTION
		----- HOLI BREAK-----
WEEK 14		
01.04.24		Elastic scattering
02.04.24		Inelastic scattering
03.04.24		Nuclear disintegration
04.04.24		photonuclear reaction
05.04.24		Radiative capture.
06.04.24		Direct reaction
WEEK 15		
08.04.24		Heavy ion reactions
09.04.24		Spallation Reactions
10.04.24		Conservation laws
12.04.24		Q-value and reaction threshold
13.04.24		" " " "
WEEK 16		
15.04.24		Nuclear Reactors General aspects of
16.04.24		Nuclear reactor design
18.04.24		Nuclear fission
19.04.24		Nuclear fusion
20.04.24		" "
WEEK 17		
22.04.24		Linear accelerators
23.04.24		Tandem accelerators
24.04.24		cyclotron
25.04.24		Betatron accelerators
26.04.24		Ionization chamber
27.04.24		G.M Counter.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

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CLASS AND SECTION

B.A / B.Sc. 2nd Sem

SUBJECT

Number theory and Trigonometry

WEEK 1	DESCRIPTION
1.01.24	Introduction : H.C.F.
2.01.24	" : L.C.M
3.01.24	
4.01.24	Primes fundamental theorem
5.01.24	"
6.01.24	"
WEEK 2	
8.01.24	"
9.01.24	Linear congruences
10.01.24	"
11.01.24	"
12.01.24	"
13.01.24	Problems :
WEEK 3	
15.01.24	Arithmetic linear Diophantine equations
16.01.24	"
18.01.24	Problems solve.
19.01.24	"
20.01.24	"
WEEK 4	
22.01.24	Introduction of Fermat's theorem
23.01.24	"
24.01.24	converse "
25.01.24	wilson's theorem
27.01.24	chinese Remainder theorem
WEEK 5	
29.01.24	Introduction of complete Residue System
30.01.24	Euler's function
31.01.24	"
01.02.24	
02.02.24	Residue ($\pmod n$)
03.02.24	($\pmod m$)

WEEK 6	DESCRIPTION
05.02.24	Euler's generalization of Fermat's th.
06.02.24	"
07.02.24	Chinese Remainder Theorem
08.02.24	"
09.02.24	Quadratic Residues
10.02.24	"
WEEK 7	
12.02.24	Legendre Symbols
13.02.24	"
15.02.24	Lemma of Gauss
16.02.24	Gauss Reciprocity Law
17.02.24	"
WEEK 8	
19.02.24	Greatest integer function $[n]$
20.02.24	"
21.02.24	number of divisors
22.02.24	Sum " " of natural numbers
23.02.24	"
24.02.24	Mobius function and Mobius inversion
WEEK 9	
26.02.24	Introduction of DE MOIVRE'S theorem
27.02.24	"
28.02.24	"
29.02.24	"
01.03.24	Roots of a " complex number
02.03.24	"
WEEK 10	
04.03.24	Solution of Equations
05.03.24	"
06.03.24	"
07.03.24	expansion of $\cos n\theta$ and $\sin n\theta$
09.03.24	" positive integer
WEEK 11	
11.03.24	"
12.03.24	Properties of exponential function
13.03.24	"
14.03.24	Circular fun of complex variables
15.03.24	"
16.03.24	De Moivre's Theorem
WEEK 12	
18.03.24	Introduction of Hyperbolic function
19.03.24	"
20.03.24	"
21.03.24	"
22.03.24	"

WEEK 13	
	DESCRIPTION
	----- HOLI BREAK -----
WEEK 14	
01.04.24	Introduction of Logarithm of a complex General Principal value
02.04.24	
03.04.24	"
04.04.24	"
05.04.24	General exponential Function
06.04.24	"
WEEK 15	
08.04.24	Introduction of inverse circular General value and principal value. Relations b/w inverse function
09.04.24	
10.04.24	
12.04.24	
13.04.24	"
WEEK 16	
15.04.24	inverse hyperbolic Function
16.04.24	
18.04.24	"
19.04.24	Gregory's Series $-x/4$ to $x/4$
20.04.24	
WEEK 17	
22.04.24	Introduction of Summation of Series combined of angles which in A.P
23.04.24	
24.04.24	"
25.04.24	"
26.04.24	"
27.04.24	"

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Mrs. Gata
 CLASS AND SECTION B.A/B.Sc Sem II
 SUBJECT Ordinary Diffⁿ Equations.

WEEK 1	DESCRIPTION
1.01.24	Introduction: Geometrical meaning of a Diff ⁿ Eq ⁿ
2.01.24	Exact diff ⁿ Equations
3.01.24	"
4.01.24	"
5.01.24	"
6.01.24	"
WEEK 2	
8.01.24	Integrating factors
9.01.24	"
10.01.24	"
11.01.24	First order higher degree Equations
12.01.24	"
13.01.24	"
WEEK 3	
15.01.24	Solvable for x, y, p .
16.01.24	Lagrange's equations
18.01.24	"
19.01.24	"
20.01.24	"
WEEK 4	
22.01.24	Clairaut's Equations
23.01.24	"
24.01.24	"
25.01.24	"
27.01.24	Singular solutions.
WEEK 5	
29.01.24	Orthogonal Trajectories in Cartesian Coordinates
30.01.24	"
31.01.24	"
01.02.24	"
02.02.24	polar co-ordinates
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	Self orthogonal family of curves.
06.02.24	"
07.02.24	"
08.02.24	Linear diff ⁿ equations with const. coeff.
09.02.24	"
10.02.24	"
WEEK 7	
12.02.24	"
13.02.24	Homogenous linear ordinary diff ⁿ Equation
15.02.24	"
16.02.24	"
17.02.24	"
WEEK 8	
19.02.24	Equations reducible to Homogenous
20.02.24	"
21.02.24	"
22.02.24	"
23.02.24	"
24.02.24	"
WEEK 9	
26.02.24	Linear diff ⁿ Equation of second order.
27.02.24	"
28.02.24	"
29.02.24	"
01.03.24	Reduction to normal form.
02.03.24	"
WEEK 10	
04.03.24	"
05.03.24	Transformation of the equation by changing the dependent
06.03.24	"
07.03.24	"
09.03.24	"
WEEK 11	
11.03.24	Solutions by operators of nonhomogenous linear diff ⁿ eq ⁿ .
12.03.24	"
13.03.24	"
14.03.24	"
15.03.24	"
16.03.24	Reduction of order of a diff ⁿ Equation.
WEEK 12	
18.03.24	Method of variations of parameters.
19.03.24	"
20.03.24	"
21.03.24	"
22.03.24	"

WEEK 13		DESCRIPTION
		----- HOLI BREAK -----
WEEK 14		
01.04.24		Ordinary Simultaneous diff ⁿ equations
02.04.24		"
03.04.24		"
04.04.24		Solution of Simultaneous diff equations involving operators
05.04.24		"
06.04.24		"
WEEK 15		
08.04.24		Simultaneous equation of the form $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$
09.04.24		"
10.04.24		"
12.04.24		"
13.04.24		Total Diff ⁿ Equations.
WEEK 16		
15.04.24		Conditions for $Pdx + Qdy + Rdz = 0$ to be exact.
16.04.24		"
18.04.24		"
19.04.24		"
20.04.24		General method of solving $Pdx + Qdy + Rdz = 0$
WEEK 17		
22.04.24		Method of auxiliary equations
23.04.24		"
24.04.24		"
25.04.24		"
26.04.24		Revision
27.04.24		"

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Dh. Sonia.

CLASS AND SECTION

B.A/B.Sc - 1st (2nd Sem)
Mathematics

SUBJECT

Paper - Vector Calculus

WEEK 1	DESCRIPTION
1.01.24	Introduction to Scalar Product of three vectors. vector product of three vectors —do— —do—
2.01.24	
3.01.24	
4.01.24	
5.01.24	Product of four vectors.
6.01.24	Introduction to Reciprocal Vectors.
WEEK 2	
8.01.24	—do—
9.01.24	Introduction to vector differentiation. —do— —do—
10.01.24	
11.01.24	
12.01.24	Scalar valued Point functions. —do—
13.01.24	
WEEK 3	
15.01.24	vector valued Point functions. —do— derivatives along a curve. —do— —do—
16.01.24	
18.01.24	
19.01.24	
20.01.24	—do—
WEEK 4	
22.01.24	directional derivatives. —do—
23.01.24	
24.01.24	Introduction to gradient of scalar point fun. —do—
5.01.24	
7.01.24	Geometrical interpretation of grad ϕ .
WEEK 5	
9.01.24	Character of gradient of a fun as a point fun. —do—
10.01.24	
11.01.24	Divergence of a vector point function. —do— —do— —do—
12.01.24	
13.01.24	
14.01.24	

WEEK 6	DESCRIPTION
05.02.24	Curl of a vector point function.
06.02.24	do
07.02.24	Characters of $\text{div } \vec{f}$ and $\text{Curl } \vec{f}$ as point functions.
08.02.24	do
09.02.24	gradient, divergence and curl of sums & products.
10.02.24	do
WEEK 7	
12.02.24	Identities related to curl & div. of sums & products of vectors.
13.02.24	do
15.02.24	do
16.02.24	Orthogonal Curvilinear Co-ordinates.
17.02.24	do
WEEK 8	
19.02.24	Conds of orthogonality.
20.02.24	Fundamental triad of mutually orthogonal unit vectors.
21.02.24	do
22.02.24	do
23.02.24	Gradient, divergence, curl and Laplacian operators.
24.02.24	do
WEEK 9	
26.02.24	do
27.02.24	cylindrical Coordinates.
28.02.24	do
29.02.24	Spherical Coordinates.
01.03.24	do
02.03.24	do
WEEK 10	
04.03.24	do
05.03.24	do
06.03.24	vector integration and its application.
07.03.24	do
09.03.24	do
WEEK 11	
11.03.24	Introduction to line integral and its application.
12.03.24	do
13.03.24	do
14.03.24	do
15.03.24	do
16.03.24	Introduction to surface integral.
WEEK 12	
18.03.24	Application of surface integral.
19.03.24	do
20.03.24	do
21.03.24	do
22.03.24	do

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Introduction to Volume Integral.
02.04.24	Application of Volume Integral.
03.04.24	do
04.04.24	do
05.04.24	do
06.04.24	Statement & Proof of Gauss thm.
WEEK 15	
08.04.24	Application of Gauss theorem.
09.04.24	do
10.04.24	Statement & Proof of Green theorem
12.04.24	Application of Green thm.
13.04.24	do
WEEK 16	
15.04.24	Statement and Proof of Stokes theorem.
16.04.24	Application of Stokes theorem.
18.04.24	do
19.04.24	do
20.04.24	do
WEEK 17	
22.04.24	Revision.
23.04.24	do
24.04.24	do
25.04.24	Test
26.04.24	do
27.04.24	Revision.

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Dr. Suman Kumari

CLASS AND SECTION

B.A/B.Sc - II (4th Sem)

SUBJECT

Mathematics
Paper - Sequences and Series.

WEEK 1	DESCRIPTION
1.01.24	Introduction to sequences and series.
2.01.24	Real. sequence and convergence.
3.01.24	Introduction to limit and thm on limits of sequence.
4.01.24	— do —
5.01.24	— do —
6.01.24	defn of bounded and monotonic sequence.
WEEK 2	
8.01.24	— do —
9.01.24	Cauchy's sequence and general Principle of convergence.
10.01.24	— do —
11.01.24	Introduction to subsequences.
12.01.24	Subsequential limits.
13.01.24	— do —
WEEK 3	
15.01.24	— do —
16.01.24	— do —
18.01.24	Introduction to infinite series.
19.01.24	Convergence of infinite series.
20.01.24	— do —
WEEK 4	
22.01.24	divergence of infinite series.
23.01.24	— do —
24.01.24	Comparison Test of +ve. terms infinite series.
25.01.24	— do —
27.01.24	— do —
WEEK 5	
29.01.24	Cauchy's general Principle of convergence of series.
30.01.24	— do —
31.01.24	Convergence and divergence of geometric series.
01.02.24	— do —
02.02.24	Hyper Harmonic series. or p-series
03.02.24	— do —

WEEK 6	DESCRIPTION
05.02.24	Boundedness of set of real numbers.
06.02.24	l.u.b and g.l.b. of a set neighbourhood.
07.02.24	Introduction to interior, isolated and limit pts.
08.02.24	do
09.02.24	Introduction to open and closed sets and interior of set.
10.02.24	do

WEEK 7	DESCRIPTION
12.02.24	Closure of a set of real nos and their properties.
13.02.24	do
15.02.24	Bolzano-Weierstrass theorem of open covers.
16.02.24	do
17.02.24	Introduction to compact sets.

WEEK 8	DESCRIPTION
19.02.24	Heine-Borel theorem.
20.02.24	do
21.02.24	Introduction to Infinite series.
22.02.24	D. Alembert's Ratio Test.
23.02.24	Application of D. Alembert's Ratio Test.
24.02.24	do

WEEK 9	DESCRIPTION
26.02.24	Rabbe's Test and its application.
27.02.24	do
28.02.24	logarithmic Test and its application.
29.02.24	do
01.03.24	do
02.03.24	De Morgan and Bertrand's Test and its application.

WEEK 10	DESCRIPTION
04.03.24	do
05.03.24	do
06.03.24	Gauss Test and its application.
07.03.24	do
09.03.24	do

WEEK 11	DESCRIPTION
11.03.24	Cauchy's Integral Test and its application.
12.03.24	do
13.03.24	Cauchy's Condensation Test and its application.
14.03.24	do
15.03.24	do
16.03.24	do

WEEK 12	DESCRIPTION
18.03.24	Introduction to Alternating series.
19.03.24	Leibnitz's Test and its application.
20.03.24	Absolute and Conditional Convergence.
21.03.24	do
22.03.24	Introduction to Arbitrary series.

WEEK	DESCRIPTION
WEEK 13	
	----- HOLI BREAK -----
WEEK 14	
01.04.24	Abel's Lemma, and Abel's Test.
02.04.24	<u>do</u>
03.04.24	Direchlet's Test and its application.
04.04.24	<u>do</u>
05.04.24	Insertion and Removal of Parenthesis.
06.04.24	Re-arrangement of Terms in a Series.
WEEK 15	
08.04.24	Direchlet's theorem.
09.04.24	<u>do</u>
10.04.24	Riemann's Re-arrangement theorem.
12.04.24	<u>do</u>
13.04.24	<u>do</u>
WEEK 16	
15.04.24	Pringsheim's theorem, Statement.
16.04.24	Multiplication of Series, and Cauchy's Product of Series.
18.04.24	<u>do</u>
19.04.24	Convergence of Infinite Product.
20.04.24	<u>do</u>
WEEK 17	
22.04.24	Absolute convergence of Infinite Products.
23.04.24	<u>do</u>
24.04.24	Revision
25.04.24	<u>do</u>
26.04.24	<u>do</u>
27.04.24	<u>do</u>

Jan - 2024

TIKA RAM GIRLS COLLEGE SONEPAT

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NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Ms Geeta

CLASS AND SECTION

BA/BS II (Semester - IV)

SUBJECT

Mathematics (Special Functions and Integral transform)

WEEK 1	DESCRIPTION
1.01.24	Introduction to Integral Transform
2.01.24	Def. of Laplace transform
3.01.24	How to find Laplace transform of fn
4.01.24	" " " " " "
5.01.24	Existence of Laplace Transform
6.01.24	Linearity of the Laplace transform
WEEK 2	
8.01.24	Shifting Theorems for L.T.
9.01.24	how to find LT of fn by applying shifting property.
10.01.24	do
11.01.24	Laplace transform of derivative
12.01.24	do
13.01.24	do
WEEK 3	
15.01.24	Laplace transform of Integrals
16.01.24	do
18.01.24	Differentiation of LT
19.01.24	do
20.01.24	do
WEEK 4	
22.01.24	Integration of LT
23.01.24	do
24.01.24	Convolution theorem
25.01.24	do
27.01.24	Find LT by convolution theo.
WEEK 5	
29.01.24	Inverse Laplace transform
30.01.24	do
31.01.24	do
01.02.24	Inverse Laplace transform of derivative
02.02.24	do
03.02.24	Inverse LT of Integrals

WEEK 6	DESCRIPTION
05.02.24	Sol. of ordinary DE using Laplace transform
06.02.24	- do -
07.02.24	- do -
08.02.24	Def. Fourier transforms
09.02.24	Linearity property of FT
10.02.24	Shifting property of FT
WEEK 7	
12.02.24	Modulation of FT
13.02.24	Convolution theorem of FT
15.02.24	- do -
16.02.24	Parseval's identity for FT
17.02.24	- do -
WEEK 8	
19.02.24	How to find Sol. of DE by FT.
20.02.24	- do -
21.02.24	- do -
22.02.24	Taking Problems on FT.
23.02.24	- do -
24.02.24	Test of FT
WEEK 9	
26.02.24	Power Series solution of DE
27.02.24	- do -
28.02.24	Def. of Beta and Gamma fn.
29.02.24	Bessel equations and its solution
01.03.24	- do -
02.03.24	- do -
WEEK 10	
04.03.24	Bessel functions and their properties
05.03.24	- do -
06.03.24	- do -
07.03.24	Recurrence relations and generating fn.
09.03.24	- do -
WEEK 11	
11.03.24	Orthogonality of Bessel fn.
12.03.24	- do -
13.03.24	Def. of Legendre and Hermite DE
14.03.24	Solution of Legendre DE
15.03.24	- do -
16.03.24	Properties of Legendre fn.
WEEK 12	
18.03.24	Rodrigue's Formula for Legendre fn.
19.03.24	Orthogonality of Legendre fn.
20.03.24	Recurrence relations and generating fn.
21.03.24	- do -
22.03.24	- do -

WEEK 13		DESCRIPTION
		----- HOLI BREAK -----
WEEK 14		
01.04.24		Sol. of Hermite DE
02.04.24		" - do -
03.04.24		Hermite fns. and their properties
04.04.24		do
05.04.24		Recurrence relations and generating fn. of Hermite
06.04.24		" - do -
WEEK 15		
08.04.24		Rodrigue formula for Hermite polynomial
09.04.24		do
10.04.24		orthogonality of Hermite polynomial
12.04.24		do
13.04.24		Taking problems on Hermite fns.
WEEK 16		
15.04.24		Taking problems on Hermite fn.
16.04.24		Revision of Legendre fn.
18.04.24		do
19.04.24		Taking problems on Legendre fn.
20.04.24		do
WEEK 17		
22.04.24		Test on Legendre's Equations.
23.04.24		Revision of Laplace Transform
24.04.24		do
25.04.24		do
26.04.24		Revision of Fourier Transform
27.04.24		do

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Mimansa

CLASS AND SECTION

BA/B.Sc IInd Yr. 4

SUBJECT

Programming in C and Num.

WEEK 1	DESCRIPTION
1.01.24	Programmer's Model of a Computer
2.01.24	"
3.01.24	"
4.01.24	Revision of above topic
5.01.24	"
6.01.24	"
WEEK 2	
8.01.24	Algorithms
9.01.24	"
10.01.24	"
11.01.24	Some Que. on above topic
12.01.24	"
13.01.24	"
WEEK 3	
15.01.24	Flow Charts
16.01.24	"
18.01.24	"
19.01.24	Data Types
20.01.24	"
WEEK 4	
22.01.24	Operators & Expressions
23.01.24	"
24.01.24	"
25.01.24	Input / Output function
27.01.24	"
WEEK 5	
29.01.24	Decision control structure
30.01.24	"
31.01.24	"
01.02.24	Decision statements
02.02.24	"
03.02.24	"

07.02.24	"
08.02.24	"
09.02.24	Some Que. on above topic
10.02.24	"
WEEK 7	
12.02.24	Implementation of Loops
13.02.24	"
15.02.24	"
16.02.24	Switch statement
17.02.24	"
WEEK 8	
19.02.24	Case control structure
20.02.24	"
21.02.24	"
22.02.24	Functions, Processors & Arrays
23.02.24	"
24.02.24	"
WEEK 9	
26.02.24	String: Character Data Types
27.02.24	"
28.02.24	"
29.02.24	Standard string handling functions
01.03.24	"
02.03.24	Arithmetic operations on Characters
WEEK 10	
04.03.24	"
05.03.24	Structures: Def. using structures
06.03.24	"
07.03.24	Use of Str. in Arrays
09.03.24	"
WEEK 11	
11.03.24	Pointers: Its Data Type
12.03.24	"
13.03.24	Pointers & Array
14.03.24	"
15.03.24	Pointers and Functions
16.03.24	"
WEEK 12	
18.03.24	Sol ⁿ of Alg. & Trans. Eq ⁿ
19.03.24	Regular falsal method
20.03.24	Bisection method
21.03.24	Secant method
22.03.24	Newton Raphson method

WEEK 13

DESCRIPTION

----- HOLI BREAK -----

WEEK 14

01.04.24

Simultaneous Lns. Alg. Eqⁿ

02.04.24

"

03.04.24

"

04.04.24

Gauss Elimination method

05.04.24

"

06.04.24

"

WEEK 15

08.04.24

Gauss Jordan method

09.04.24

"

10.04.24

Triangularization method

12.04.24

"

13.04.24

"

WEEK 16

15.04.24

Cramer's method

16.04.24

"

18.04.24

"

19.04.24

cholesky decomposition method

20.04.24

"

WEEK 17

22.04.24

Iterative method

23.04.24

"

24.04.24

Jacobi's method

25.04.24

"

26.04.24

Gauss-Seidel's method

27.04.24

Relaxation method

TIKA RAM GIRLS COLLEGE SONEPAT

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NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Santosh Rathi
 CLASS AND SECTION B.A./B.Sc. IV Sem.
 SUBJECT Real & Complex Analysis,

WEEK	DESCRIPTION
WEEK 1	
1.01.24	Introduction: Jacobians
2.01.24	"
3.01.24	"
4.01.24	Beta and Gamma functions
5.01.24	"
6.01.24	"
WEEK 2	
8.01.24	Double and Triple Integrals
9.01.24	"
10.01.24	"
11.01.24	"
12.01.24	problems
13.01.24	"
WEEK 3	
15.01.24	Dirichlet's Integrals.
16.01.24	"
18.01.24	"
19.01.24	"
20.01.24	"
WEEK 4	
22.01.24	Change of order of integration in double integrals -
23.01.24	"
24.01.24	"
25.01.24	"
27.01.24	"
WEEK 5	
29.01.24	Fourier's Series: Fourier expansion of piecewise monotonic functions
30.01.24	"
31.01.24	"
01.02.24	"
02.02.24	"
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	Properties of Fourier coefficients " " " " " " " "
06.02.24	
07.02.24	
08.02.24	
09.02.24	
10.02.24	Dirichlet's conditions " "
WEEK 7	
12.02.24	Parseval's Identity for Fourier series " " " " " " " "
13.02.24	
15.02.24	
16.02.24	
17.02.24	
WEEK 8	
19.02.24	Fourier series for even & odd functions " " " " " " " "
20.02.24	
21.02.24	
22.02.24	
23.02.24	
24.02.24	Half range series change of intervals
WEEK 9	
26.02.24	Extended complex plane. " " " " " " " "
27.02.24	
28.02.24	
29.02.24	
01.03.24	
02.03.24	Stereographic projection of complex no's.
WEEK 10	
04.03.24	Continuity and diff ⁿ of complex functions " " " " " " " "
05.03.24	
06.03.24	
07.03.24	
09.03.24	
WEEK 11	
11.03.24	Analytic functions " " " " " " " "
12.03.24	
13.03.24	
14.03.24	
15.03.24	
16.03.24	C-R eqn's " "
WEEK 12	
18.03.24	Harmonic functions " " " " " " " "
19.03.24	
20.03.24	
21.03.24	
22.03.24	

WEEK 13	
	DESCRIPTION
	----- HOLI BREAK -----
WEEK 14	
01.04.24	Mappings by elementary functions : Translation
02.04.24	"
03.04.24	"
04.04.24	Rotation
05.04.24	"
06.04.24	"
WEEK 15	
08.04.24	Magnification and Inversion
09.04.24	"
10.04.24	"
12.04.24	"
13.04.24	"
WEEK 16	
15.04.24	conformal mappings
16.04.24	"
18.04.24	"
19.04.24	"
20.04.24	Mobius Transformations
WEEK 17	
22.04.24	Fixed pts
23.04.24	"
24.04.24	"
25.04.24	Cross ratio
26.04.24	Inverse pts and critical mappings
27.04.24	"

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Mrs. Geeta
 CLASS AND SECTION BA/B.Sc. IIIrd Yr. VIth Sem.
 SUBJECT Linear Algebra

WEEK 1	DESCRIPTION
1.01.24	Vector Spaces
2.01.24	"
3.01.24	Subspaces
4.01.24	"
5.01.24	Sum & Direct Sum of Subspaces
6.01.24	"
WEEK 2	
8.01.24	Linear span
9.01.24	"
10.01.24	Linearly Ind. subsets of Vector space
11.01.24	"
12.01.24	Linearly Dep. subsets of Vector space
13.01.24	"
WEEK 3	
15.01.24	Finitely generated Vector space
16.01.24	"
18.01.24	Existence n for basis of fin. Gen'd. Vector space
19.01.24	"
20.01.24	finite dimensional vector space
WEEK 4	
22.01.24	Invariance of No. of elements of Basis set
23.01.24	"
24.01.24	Dimensions
25.01.24	"
27.01.24	Quotient space & its dimension
WEEK 5	
29.01.24	Homomorphism of Vector space
30.01.24	"
31.01.24	Isomorphism of Vector space
01.02.24	"
02.02.24	Linear Transf. on Vector space
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	Vector space of all Lns. Transformations
06.02.24	"
07.02.24	"
08.02.24	Dual Spaces
09.02.24	"
10.02.24	Bidual spaces
WEEK 7	
12.02.24	Annihilator of subspaces of F.D.V. space
13.02.24	"
15.02.24	"
16.02.24	Null space
17.02.24	"
WEEK 8	
19.02.24	Range Space of Linear Transformation
20.02.24	"
21.02.24	Rank & Nullity Theorem
22.02.24	"
23.02.24	Revision
24.02.24	Discussion of Que.
WEEK 9	
26.02.24	Algebra of Lns. Transformation
27.02.24	"
28.02.24	Minimal Poly. of Lns. Transf.
29.02.24	"
01.03.24	Some Que. on above topic
02.03.24	"
WEEK 10	
04.03.24	Singular Lns. Transformation
05.03.24	"
06.03.24	Non-Singular Lns. Transformation
07.03.24	"
09.03.24	Some Que.
WEEK 11	
11.03.24	Matrix of Lns. Transformation
12.03.24	"
13.03.24	Change of Basis
14.03.24	"
15.03.24	Eigen Values of Lns. Transf.
16.03.24	"
WEEK 12	
18.03.24	Eigen Vectors of L.T.
19.03.24	"
20.03.24	Revision
21.03.24	"
22.03.24	Discussion

WEEK 13

DESCRIPTION

----- HOLI BREAK -----

WEEK 14

01.04.24

Inner Product Spaces

02.04.24

Cauchy-Schwarz Inequality

03.04.24

Orthogonal Vectors

04.04.24

05.04.24

06.04.24

WEEK 15

08.04.24

The Orthogonal Complements

09.04.24

Orthogonal Sets & Basis

10.04.24

12.04.24

13.04.24

WEEK 16

15.04.24

Bessel's Inequality for finite Dim. V.S.

16.04.24

Gram-Schmidt Orthogonalization process

18.04.24

19.04.24

20.04.24

Some Que.

WEEK 17

22.04.24

Adjoint of Lin. Transf. & its Properties

23.04.24

Unitary Linear Transformation

24.04.24

25.04.24

26.04.24

27.04.24

Revision

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Dr. Sonia

CLASS AND SECTION

B.A./ B.Sc III (6th Sem) (Sem)

SUBJECT

Dynamics

WEEK 1	DESCRIPTION	
1.01.24	Introduction: Velocity and accel. along radial. along transverse.	
2.01.24		
3.01.24		
4.01.24		
5.01.24		
6.01.24		
WEEK 2		
8.01.24	problems on velocity & accel.	
9.01.24		
10.01.24		
11.01.24		
12.01.24		
13.01.24		
WEEK 3		
15.01.24	Tangential and normal directions	
16.01.24		
18.01.24		
19.01.24		
20.01.24		problems related to tangential & Normal directions
22.01.24		
WEEK 4		
23.01.24	Simple Harmonic Motion	
24.01.24		
25.01.24		
27.01.24		
WEEK 5		
29.01.24	Elastic strings	
30.01.24		
31.01.24		
01.02.24		Introduction: mass momentum
02.02.24		
03.02.24		

WEEK 6	DESCRIPTION
05.02.24	Force
06.02.24	"
07.02.24	Newton's laws of motion
08.02.24	"
09.02.24	"
10.02.24	"
WEEK 7	
12.02.24	Work problems
13.02.24	"
15.02.24	Power
16.02.24	"
17.02.24	Energy
WEEK 8	
19.02.24	Definitions of conservative
20.02.24	conservative forces
21.02.24	"
22.02.24	"
23.02.24	Impulsive forces
24.02.24	"
WEEK 9	
26.02.24	Motion on smooth and rough planes
27.02.24	"
28.02.24	"
29.02.24	"
01.03.24	Projectile motion of a particle in a plane
02.03.24	"
WEEK 10	
04.03.24	"
05.03.24	"
06.03.24	"
07.03.24	Revision
09.03.24	"
WEEK 11	
11.03.24	Vector angular velocity
12.03.24	"
13.03.24	"
14.03.24	"
15.03.24	"
16.03.24	"
WEEK 12	
18.03.24	Revision
19.03.24	"
20.03.24	—
21.03.24	Test
22.03.24	Discussion

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Introduction General motion of a rigid body
02.04.24	" "
03.04.24	Central orbits
04.04.24	" "
05.04.24	" "
06.04.24	" "
WEEK 15	
08.04.24	Kepler's Laws of Motion
09.04.24	" "
10.04.24	" "
12.04.24	" "
13.04.24	" "
WEEK 16	
15.04.24	Motion of a particle in 3-Dimensional
16.04.24	" "
18.04.24	" "
19.04.24	" "
20.04.24	Accelerations in terms of diff. co-ordinates systems
WEEK 17	
22.04.24	" "
23.04.24	" "
24.04.24	" "
25.04.24	Revision
26.04.24	Test
27.04.24	Discussion

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ...MANITA.....
 CLASS AND SECTION ...B.Sc. 1st year (IInd Sem.) Non Med.
 SUBJECT ...Chemistry.....

WEEK 1	DESCRIPTION
1.01.24	Introduction of syllabus
2.01.24	Introduction of organic syllabus
3.01.24	Nomenclature of alkenes
4.01.24	Mech. of dehydration of alcohols and
5.01.24	dehydration of alkyl halides.
6.01.24	Saytzeff rule.
WEEK 2	
8.01.24	Hofmann elimination, physical properties
9.01.24	Revision of these topics.
10.01.24	Relative stability of alkenes
11.01.24	Chemical reactions of alkenes
12.01.24	Mech. involved in hydrogenation
13.01.24	electrophilic and free radical additions.
WEEK 3	
15.01.24	Markownikoff's rule, hydroboration
16.01.24	oxidation, oxymercuration, reduction
18.01.24	ozonolysis, hydration
19.01.24	hydroxylation
20.01.24	oxidation with KMnO ₄
WEEK 4	
22.01.24	Revision of this chapter.
23.01.24	Nomenclature of benzene derivatives
24.01.24	Aromatic nucleus and side chain, Aromaticity
25.01.24	Huckel rule, aromatic ions, annulenes
27.01.24	anti aromatic and non-aromatic comp.
WEEK 5	
29.01.24	Revision of these topics
30.01.24	General pattern of the mech. mech. of Nitration
31.01.24	halogenation, sulphonation, Friedel-Crafts Re ⁿ .
01.02.24	Energy profile diagram, activating deactivating
02.02.24	substitution (ortho and orientation).
03.02.24	Revision.

WEEK 6	DESCRIPTION
05.02.24	Dienes and alkynes - Nomenclature & Classification.
06.02.24	isolated, conjugated and Cumulated dienes.
07.02.24	Str. of butadienes. Chemical Reactions
08.02.24	Diels-Alder reaction.
09.02.24	Nomenclature - str. and bonding in alkynes.
10.02.24	Method of formation, chemical Reactions.
WEEK 7	
12.02.24	Mech. of electrophilic and Nucleophilic. Gold ^{III} Reac ⁿ .
13.02.24	Alkyl and Aryl halides - Nomenclature
15.02.24	Method of formation, chemical Reac ⁿ & Mech.
16.02.24	S _N ¹ , S _N ² Reactions, Energy profile diagram
17.02.24	Methods of formation & Mech. of nucleophilic Reac ⁿ .
WEEK 8	
19.02.24	Aromatic substitution sea ^x relative reactivities of
20.02.24	alkyl halides vs vinyl and aryl halides.
21.02.24	Introduction of Inorganic chemistry & hydrogen bonding
22.02.24	Definition, types and effects of H-bonding.
23.02.24	Application of van der Waals forces.
24.02.24	Metallic bond - introduction
WEEK 9	
26.02.24	Band theory, Semiconductors types, applications.
27.02.24	s-Block elements Comparative study of elements
28.02.24	diagonal relationships. Salient features.
29.02.24	Solvation and complexation and functions.
01.03.24	Revision
02.03.24	Chemistry of Noble gas - chemical properties
WEEK 10	
04.03.24	Chemical reactivity, chemistry of Xenon, str.
05.03.24	Bonding of fluorides, oxides and oxyfluorides
06.03.24	Xenon - str. and Bonding.
07.03.24	p-Block elements - emphasis on comparative study
09.03.24	Properties of p-block elements.
WEEK 11	
11.03.24	Boron family - Diborane - properties and str.
12.03.24	Borazine - chemical properties and str. Trihalides
13.03.24	of Boron - str. of aluminium Chlorides.
14.03.24	Revision
15.03.24	Carbon family - Introduction, Catenation, fluorocarbons
16.03.24	Silicates, Silicones - general Methods of Prep ⁿ & Properties.
WEEK 12	
18.03.24	Nitrogen family - str., relative strengths of oxyacids
19.03.24	Str. of white, yellow and red phosphorus.
20.03.24	oxygen family - str. and acidic strength, prep.
21.03.24	uses. Halogen family - Properties, interhalogen
22.03.24	properties., oxyacids of chlorine - str. and strength.

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
WEEK 14	
01.04.24	Introduction of kinetics - Rate of rea^x , rate eq ⁿ
02.04.24	Factors influencing the rate of rea^x conc., temp.
03.04.24	press., solvent, light, catalyst. Order of rea^x
04.04.24	I st order, II nd order, III rd order rea^x .
05.04.24	Half life period, Methods of determination of rea^x .
06.04.24	Revision.
WEEK 15	
08.04.24	Kinetics - II - Effect of temp. - Arrhenius eq ⁿ .
09.04.24	Theories of rea^x rate - simple collision theory
10.04.24	for unimolecular and Bimolecular collision.
12.04.24	Transition state theory of Bimolecular rea^x .
13.04.24	Revision
WEEK 16	
15.04.24	Test
16.04.24	Electrochemistry - I factors affecting electrolytic conduction.
18.04.24	specific conductance molar conductance, equivalent conductance.
19.04.24	Arrhenius theory of ionization ostwald's Dilution.
20.04.24	Debye - Hukel - onsegar equation for strong electrolyte.
WEEK 17	
22.04.24	Hittorfs Methods. Electrochemistry - II - Kohlrausch's law
23.04.24	Calculation of molar ionic conductance, effect of viscosity
24.04.24	Application of Kohlrausch's law in calculation of conductance
25.04.24	Conductometric titrations. Def. of pH, $\text{p}K_a$, Buffer sol ⁿ
26.04.24	Henderson - Hazel eq ⁿ Buffer mech.
27.04.24	Revision.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ✓ Dr. Divya Bebra, Ms Monika
 Dr. Monika Duban
 CLASS AND SECTION B.Sc. 2nd year (4th sem)
 SUBJECT Organic Chemistry

WEEK 1	DESCRIPTION
1.01.24	Lanthanoids introduction (f-block)
2.01.24	Electronic spectra of Lanthanoids
3.01.24	Introduction of Second law and Carnot cycle and Carnot theorem
4.01.24	Thermodynamic scale of temp. Concept of entropy as state function, V & T and P & T
5.01.24	IR-Molecular Vib ⁿ , Hook's law, Selection Rule, Intensity & position of IR bands.
6.01.24	measurement IR spectrum, Fingerprint region, characteristics ab ⁿ peaks.
WEEK 2	
8.01.24	Oxidation states and other properties of f-block
9.01.24	Ionic radii discussion
10.01.24	entropy change in Physical, Spontaneity of and equilibrium
11.01.24	Entropy change in Ideal gases and mixing of gas.
12.01.24	Interpretation of IR spectra of simple org. compds. Application of
13.01.24	IR spectroscopy in str. elucidation of simple org. compds.
WEEK 3	
15.01.24	Lanthanoid contraction
16.01.24	Complex formation
18.01.24	Revision and Test of Unit-I
19.01.24	Test of IR spectroscopy.
20.01.24	Amines - structure and Nomenclature of Amines.
WEEK 4	
22.01.24	Occurrence of Lanthanoids.
23.01.24	General features of Actinoids.
24.01.24	Nearest Real theorem, statement of concept of residual entropy, absolute entropy
25.01.24	Gibbs and Helmholtz function, Gibbs function and Helmholtz function.
27.01.24	Physical Properties, Separation of 1 ^o , 2 ^o , 3 ^o amines,
WEEK 5	
29.01.24	Chemistry of actinoids and their properties.
30.01.24	Comparison of separation of Np, Pu.
31.01.24	Advantages of thermodynamic quantities over entropy change
01.02.24	Variation of G and A with P, V, and T.
02.02.24	Structural features affecting basicity of amines. Prep ⁿ of
03.02.24	alkyl & aryl amines (red ⁿ of nitro compds into C)

WEEK 6	DESCRIPTION
05.02.24	Chemistry of separation of Am & U
06.02.24	"
07.02.24	cells in several type: cells, conventional sep. of electrochemical cells.
08.02.24	Emf of cell in measurement, Weston Standard cell, activity Coefficients
09.02.24	Reductive amination of aldehydic & ketonic groups.
10.02.24	Gabriel - phthalimide rxn, Hoffman bromamide rxn
WEEK 7	
12.02.24	Comparison of properties of Lanthanoids
13.02.24	" " of Actinoids.
15.02.24	Calculation of thermodynamic quantities of cell, types of reversible electrode
16.02.24	Electrophilic aromatic sub ⁿ in aryl amines, local of amines with nitro
17.02.24	Diazonium salt - mech of diazotisation, structure of benzene diazo and nitrobenzene and nitrobenzene
WEEK 8	
19.02.24	Analysis of acid radicals
20.02.24	"
21.02.24	Nernst equation in deviation of emf. of cells
22.02.24	Single electrode potentials & Revision
23.02.24	Replacement of diazo group by H, OH, F, Cl, Br, I, NO ₂ , CN group.
24.02.24	Reduction of diazonium salts to hydrocarbons, coupling Rxn.
WEEK 9	
26.02.24	Analysis of acid radicals and their interference.
27.02.24	"
28.02.24	Standard Hydrogen electrode, Reference electrode
29.02.24	Standard electrode potential, sign convention.
01.03.24	Synthetic Applications + Test
02.03.24	Nitro compound - Prep ⁿ of nitro alkanes & nitro arenes
WEEK 10	
04.03.24	Interference of acid radicals and their removal
05.03.24	"
06.03.24	Electrochemical Series and Revision.
07.03.24	Application of electrochemical Series
09.03.24	their red ⁿ in acidic, neutral and alkaline medium.
WEEK 11	
11.03.24	Revision of previous unit
12.03.24	Queries regarding unit done
13.03.24	Introduction of concentration cell with and without Reference
14.03.24	Conc. cells in without transference.
15.03.24	Aldehydes & ketones, nomenclature and str of >C=O groups.
16.03.24	Synthesis of aldehydes and ketones with particular references
WEEK 12	
18.03.24	Analysis of basic radical
19.03.24	"
20.03.24	Liquid junction potential.
21.03.24	to the synthesis of aldehyde from acid chloride, Advantages
22.03.24	of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridium dichromate (PDC) & Pyridine dichromate.

WEEK 13	DESCRIPTION
	----- HOLI BREAK -----
WEEK 14	
01.04.24	Interference of basic radical
02.04.24	"
03.04.24	Application of Emf Measurement i.e. valency of ions.
04.04.24	Solubility product activity Coefficient.
05.04.24	Revision + Test
06.04.24	Physical properties, Comparison of reactivities of ald, ketones.
WEEK 15	
08.04.24	Precipitation introduction & briefing
09.04.24	Co-precipitation
10.04.24	Potentiometric titration. (acid & Base resox)
12.04.24	Mech of nucleophilic addition to $>C=O$ grp with particular
13.04.24	emphasis on benzoin, aldol, perkin and crocovenagel Cond ⁿ .
WEEK 16	
15.04.24	Post-precipitation introduction
16.04.24	Briefing of purification of ppt.
18.04.24	Determination of pH using Hydrogen electrode
19.04.24	Cond ⁿ with ammonia and its derivatives. Wittig rxn.
20.04.24	mannich rxn, cond ⁿ of ald, RVO of ketones.
WEEK 17	
22.04.24	Revision of the 9 th unit
23.04.24	Test of whole syllabus
24.04.24	Quinhydrone electrode and glass electrode
25.04.24	Revision and Test of syllabus
26.04.24	Cannizzaro rxn, MPV, Clemmensen, Wolf-Kishner
27.04.24	Lipity and Nalshly Red ⁿ .

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

2023-24

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ✓ Dr. Monika Duttan

CLASS AND SECTION B.Sc. IIIrd (6th sem)

SUBJECT Inorganic chemistry, physical, organic chemistry

WEEK 1	DESCRIPTION
1.01.24	OMGs - Definition, nomenclature, classification of OM Compds.
2.01.24	preparation, properties mononuclear carbonyls.
3.01.24	Bonding of Alkyls of Li, Al, Hg and Sn. in brief acc. of
4.01.24	metal-ethylene complexes. nature of bonding in metal carbonyls.
5.01.24	HSAB concept - Arrhenius, Bronsted - Lowry the Lux-Flood,
6.01.24	solvent system & Lewis concepts of acids & bases.
WEEK 2	
8.01.24	Test of previous section.
9.01.24	Relative strength of acids and bases - Concept of Hard
10.01.24	and soft acids and bases. symbiosis, electronegativity
11.01.24	and hardness and softness.
12.01.24	Bio-inorganic - Essential and trace elements in biological
13.01.24	processes. metalloproteins with special reference to Fe, Cu, Zn, Co, Ni, Mo.
WEEK 3	
15.01.24	Test
16.01.24	Biological role of alkali and alkaline earth metal
18.01.24	ions with special reference to Ca^{2+} , Nitrogen fixation
19.01.24	silicones and phosphazenes; silicones and phosphazenes.
20.01.24	their preparation, properties, structures, uses.
WEEK 4	
22.01.24	Electronic spectrum introduction.
23.01.24	potential energy curves for bonding & antibonding mo.
24.01.24	Qualitative description of selection rules.
25.01.24	Frank - Condon principle
27.01.24	Revision of these topics.
WEEK 5	
29.01.24	Test
30.01.24	Qualitative description of sigma, pi, n-MO.
31.01.24	Energy level diagram, transition.
01.02.24	Photochemistry - Interaction of radiation with matter,
02.02.24	diff. b/w thermal & photochemical processes. Laws of
03.02.24	photochemistry Grotthuss - Draper's law, Stark - Einstein law

WEEK 6	DESCRIPTION
05.02.24	Jablonski diagram depicting various processes occurring in the excited state. a qualitative description of fluorescence, phosphorescence, non-radiative processes, quantum yield, photosensitized rxn energy transfer process.
06.02.24	
07.02.24	
08.02.24	
09.02.24	
10.02.24	
WEEK 7	
12.02.24	Dilute sol ⁿ - ideal & non-ideal solution, methods of expressing conc. of sol ⁿ activity & activity coeff. Dilute sol ⁿ colligative properties, Raoult's law, relative lowering of V.P.
13.02.24	
15.02.24	
16.02.24	
17.02.24	
WEEK 8	
19.02.24	Det of molecular weight by colligative properties Thermodynamic relations Experimental methods for det various c.p. Abnormal molar mass degree of dissociation & association of solutes. revision
20.02.24	
21.02.24	
22.02.24	
23.02.24	
24.02.24	
WEEK 9	
26.02.24	statement and meaning of the terms - phase components and degree of freedom thermodynamic derivation of Gibbs' phase rule phase eq ^m of one component system. phase eq ^m of 2 components system. solid-liquid, simple eutectic.
27.02.24	
28.02.24	
29.02.24	
01.03.24	
02.03.24	
WEEK 10	
04.03.24	Introduction - molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine methods of synthesis and chemical rxn with particular emphasis on the mech. of E ₂ .
05.03.24	
06.03.24	
07.03.24	
09.03.24	
WEEK 11	
11.03.24	mech. of nucleophilic sub ⁿ rxn in pyridine derivatives Comparison of basicity of pyridine, piperidine & pyrrolidine. Heterocyclic Compound - II introduction Condensed five & six membered heterocycles. Preparation and rxns of indole, thiole
12.03.24	
13.03.24	
14.03.24	
15.03.24	
16.03.24	
WEEK 12	
18.03.24	Test + Assignment given Thiobethers, sulphonic acids, sulphonamides and Sulphathiazidine Synthetic detergents alkyl and aryl sulphonates. Organic synthesis via enolate. acidity of hydrogens
19.03.24	
20.03.24	
21.03.24	
22.03.24	

WEEK 13		DESCRIPTION
		----- HOLI BREAK -----
WEEK 14		
01.04.24		Alylation of diethyl malonate and ethyl acetoacetate.
02.04.24		Syn. of ethylacetoacetate, the Claisen condens ⁿ .
03.04.24		Keto-enol tautomerism of ethyl acetoacetate
04.04.24		Syn. Polymers. - Add ⁿ of chain growth polym ⁿ .
05.04.24		Free radical vinyl polymerisation, ionic vinyl polym ⁿ .
06.04.24		Ziegler-Natta catalyst, vinyl polymerisation.
WEEK 15		
08.04.24		Condensat ion of step growth polym ⁿ polyesters
09.04.24		polyamides, phenol formaldehyde resin, urea
10.04.24		formaldehyde resin, epoxy resin and PU
12.04.24		Natural and synthetic drugs.
13.04.24		Revision
WEEK 16		
15.04.24		Charact ^r of AA, acid-base behaviours, isoelectre point
16.04.24		electrophoresis. prep ⁿ of amino acids.
18.04.24		str & nomenclature of peptides and proteins.
19.04.24		Charact ^r of protein, peptide str. det.
20.04.24		end group analysis, selective hydrolysis of peptides
WEEK 17		
22.04.24		Classical peptide synthesis, solid phase peptide
23.04.24		str of peptides and proteins.
24.04.24		primary & secondary structure.
25.04.24		Revision
26.04.24		Revision
27.04.24		presentation by students.