Lesson Plan

Class and Section…. HONRS PHYSICS 3rd SEM

Subject: MATHEMATICAL PHYSICS

Lectures	Topics
1.	INTRODUCTION
2.	Complex Variables AND Importance of complex numbers
3.	graphical representation of addition and subtraction of complex number
4.	graphical representation of multiplication and divide of complex number
5.	De Moivre's theorem.
6.	Roots of complex numbers
7.	Euler's formula
8.	Functions of complex variables
9.	Cauchy-Riemann conditions
10.	Analytic functions.
11.	Continue…..
12.	Class test- 1
13.	Singularities.
14.	Differentiation of a function of a complex variable
15.	Integration of a function of a complex variable
16.	Cauchy's theorem
17.	Cauchy's integral formula.
18.	Morera's theorem
19.	Cauchy's inequality
20.	Liouville's theorem.
21.	Fundamental theorem of algebra.
22.	Multiple valued functions
23.	simple ideas of branch points
24.	Riemann surface
25.	. Power series of a complex variable
26.	Taylor and Laurent series,
27.	Residue and residue theorem
28.	CONTINUE…
29.	RIVISION
30.	Multiple valued functions
31.	CLASS TEST-3
32.	Contour integration and its application to evaluation of integrals
33.	CONTINUE….
34.	Singular points of second order differential equations and their importance
35.	CONTINUE….
36.	Series methods (Frobenius)
37.	Legendre differential equations.
38.	Bessel differential equations.
39.	Hermite differential equations.
40.	Laguerre differential equations.
41.	RIVISION
42.	PREVIOUS YEAR QUESTION PAPERS
43.	TEST DISCUSSION

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Lesson plan

Name of the Assistant/ Associate Professor: Mr. SACHIN
Class and Section: **B.Sc. HON. PHYSICS 3rd sem**
Subject: **THERMAL PHYSICS – I (302)**

Lectures	Topics
1	INTRODUCTION TO THERMAL PHYSICS
2	DISCUSSION ON UNIT 1 TOPICS DONE DURING ONLINE MODE
3	IDEAL GAS AND REAL GAS BEHAVIOUR
4	IDEAL GAS: EQUATION OF STATE
5	IDEAL GAS: INTERNAL ENERGY
6	IDEAL GAS: SPECIFIC HEATS
7	IDEAL GAS: ENTROPY
8	CONT.
9	ISOTHERMAL PROCESS
10	ADIABATIC PROCESS
11	ADIABATIC LAPSE RATE
12	COMPRESSIBILITY AND EXPENSION COEFFICIENT.
13	CONT.
14	REAL GASES: DEVIATION FROM IDEAL GAS EQUATION.
15	CONT.
16	ANDREW'S EXPERIMENT ON CO_2 GAS
17	ONNES EQUATION OF STATE
18	THE VIRIAL COEFFICIENTS
19	CONTINUITY OF LIQUID AND GASEOUS STATE
20	VAN DER WAALS' EQUATION OF STATE
21	CONT.
22	CRITICAL CONSTANS IN TERMS OF VANDER WAALS' CONSTANTS
23	VANDER WAAL CONSTANTS IN TERMS OF CRITICAL CONSTANTS , CRITICAL COEFFICIENT
24	BOYLE'S TEMPERATURE
25	LAWS OF CORRESPONDING STATES, REDUCED EQUATION OF STATE
26	FREE EXPENSION: JOULE'S EXPERIMENT
27	JOULE THOMSON EFFECT(POROUS PLUG EXP.)
28	CONT.

29	REVISION AND PROBLEMS
30	REVISION AND PROBLEMS
31	BROWNIAN MOTION
32	EXAMPLES OF BROWNIAN MOTION IN PHYSICS: GALVANOMETER MIRROR
33	SEDIMENTATION
34	JOHNSON'S NOISE
35	DOUBT CLASS
36	ASSIGNMENT 1
37	REVISION OF UNIT 1(COMPLETED DURING ONLINE MODE)
38	~derivation of Maxwell law of distribution of velocities
39	~experimental verification
40	Cont.
41	Cont.
42	~mean free path
43	~transport phenomena
44	~viscosity
45	~conduction and diffusion
46	~theory of Langevin
47	~experimental determination of Avagadro's no.
48	
49	PROBLEMS AND REVISION
50	Previous year question paper discussion
51	Previous year question paper discussion
52	Previous year question paper discussion
53	Problems and revision
54	Problems and revision
55	Problems and revision

Lesson plan

Name of the Assistant Professor: Dr. Surjeet Chahal
Class and Section: B.Sc Honors Physics 3rd sem
Subject: Vibration and Wave optics (PHY303)

Lectures	Topics
1.	Student Interaction & general Introduction
2.	Motivational Lecture for physics people
3.	Scope of vibrational and wave optics physics
4.	Different area of research in vibrational and optics
5.	Basic Overview of entire syllabus
6.	Basic Introduction (I unit)
7.	Degree of freedom
8.	Types of vibrational motion
9.	Superposition principle
10.	Linearity principle
11.	Simple Harmonic oscillator (SHM)
12.	Characteristics of SHM
13.	Numerical problems
14.	Superposition of two Harmonic oscillator
15.	Beats and its application
16.	Superposition of N Harmonic oscillator
17.	Continue
18.	Numerical problems
19.	Introduction of Coupled Oscillator
20.	Two coupled pendulums
21.	Normal cordinates
22.	Normal Modes calculation
23.	Energy exchange in coupled oscillator
24.	Many coupled oscillator
25.	Its normal mode calculations
26.	Assignment
27.	Transverse vibration of String
28.	Energy of vibration string
29.	Continue
30.	Numerical problems
31.	Plane and spherical waves
32.	Group and phase velocity
33.	Superposition of N Harmonic waves
34.	Wave packets
35.	Major revision
36.	Class Test
37.	Test distribution and discussion
38.	Basic Introduction (II unit)
39.	Light waves and different models
40.	EM nature of light waves
41.	Coherence nature of light
42.	Independent light source
43.	Interference introduction
44.	Types of interference
45.	Young double slit experiment
46.	Lloyd mirror
47.	Continue

48.	Fresnel biprism
49.	Interference in thin film
50.	Interference in wedge shape film
51.	Condition of interference
52.	Numerical problems
53.	Fringes of equal inclination
54.	Assignment
55.	Fringes of equal thickness
56.	Michelson interferometer
57.	Construction of fringes
58.	Different types of fringes
59.	Application
60.	Fringes visibility
61.	Numerical problems
62.	Particle coherence
63.	Coherence time & length
64.	Temporal coherence & Spatial coherence
65.	Numerical problems
66.	Fabry Perot interferometer
67.	Class Test
68.	Test distribution and discussion
69.	(Major Revision) & discussion of previous paper (UnitI)
70.	(Major Revision) & discussion of previous paper (UnitII)

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Lesson plan

Class:- B.Sc. (H) Physics-III Sem

Subject:- Quantum Mechanics(PHY-304)

Teacher Name:- Dr. Kavita Chauhan

Lectures	Particular
1.	**Unit I: Introduction about the syllabus and books**
2.	History of the subject from 17^{th} century
3.	Phenomenon observed related to the light and the explanation by the Newton
4.	Explanation by Christen Huygens
5.	--continue--
6.	Young's double slit experiment-1801
7.	--continue--
8.	Failures of Newton's particle model
9.	Black body radiation problem-1901
10.	--continue--
11.	Photo-electric effect-1906
12.	Niels Bohr's atomic model-1913
13.	--continue--
14.	Reduced mass correction
15.	Compton effect-1923
16.	--continue--
17.	Discussion what we have studied till the time
18.	Class test-1
19.	Class test-1 solved and distributed
20.	De-Broglie hypothesis-1924
21.	--continue--
22.	Davission and Germer experiment-1927
23.	GP Thompson experiment-1928 (nearly)
24.	YDSE with electrons
25.	Representation of the particle by wavy information called wave packet
26.	Probabilistic interpretation of the abstract wavy information associated with the particle by Max Born
27.	Uncertainty principle
28.	**First Assignment**
29.	Basic postulates and formalism of the quantum mechanics
30.	Schrodinger equation, wave functions
31.	Eigen values
32.	Conditions for physical acceptability of the wave functions
33.	--continue--
34.	Derivation of the time independent Schrodinger equation
35.	--continue--
36.	Particle in 1d –box, quantization of the energy
37.	Frank – Hertz experiment

38.	General discussion
39.	Surprise quiz
40.	Scattering problem in 1dimension
41.	Reflection and transmission by a finite potential step
42.	--continue--
43.	**Class test -II**
44.	Class test solved and distributed
45.	Attractive and repulsive potential barriers
46.	--continue--
47.	Gamow theory of alpha decay
48.	--continue--
49.	Quantum phenomenon of tunneling
50.	--continue--
51.	Tunnel diode –qualitative description
52.	Spectrum of a square well
53.	--continue--
54.	General Discussion
55.	**Second Assignment**
56.	Bound state problems: general features of a bound particle system
57.	--continue--
58.	One dimensional simple harmonic oscillator
59.	--continue--
60.	Particle in a spherical symmetric potential, rigid rotator
61.	--continue--
62.	Orbital angular momentum and its space quantization
63.	--continue--
64.	Quantum mechanical solution of the hydrogen atom
65.	--continue--
66.	**Class Test:III**
67.	revision
68.	--continue--
69	Class test-III solved and distributed
70	revision

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Lesson Plan

Class and Section: B.Sc(H.P.) 3rd Sem.

Subject: Mathematics - III , Phy-305

Lecture	Topics
1	hello
2	Numericals
3	Numericals
4	Classical Definition of Probability
5	Numericals
6	Statistical Definition of Probability
7	Numericals
8	Numericals
9	Numericals
10	Axiomatic Definition of Probability
11	Numericals
12	Continued
13	Addition theorem
14	Numericals
15	Continued
16	Boole's Inequality
17	Numericals
18	Conditional Probability
19	Numericals
20	Multiplication Theorm
21	Multiplication Theorm
22	Numericals over Multiplication theorem
23	Independece of events
24	Numericals
25	Bayes' theorem
26	Numericals
27	Random Variable
28	Discrete and continuous random variable
29	Distribution Functions
30	Numericals
31	Cumulative distribution function
32	Numericals
33	Expectation of a random variable
34	Numericals on expectation
35	Concept of moments
36	Numericals
37	Uses of Moments
38	Uses of Moments
39	Uses of Moments
40	Moment Generating Function
41	Numericals
42	Limitations of MGF
43	Numericals
44	Numericals
45	Probabiltiy Generating Functions
46	Numericals
47	Revision of MGF
48	Numericals
49	Raw Moments
50	Central Moments
51	Isometry
52	Definitions of probability
53	Numericals
54	Addition theorem and multiplication theroem
55	Numericals
56	Discrete and continuous random variables
57	Distribution functions along with numericals
58	Extensions of the subject
59	Future scope of the subject

RPS Degree College, Balana (Mahendergarh)

Lesson Plan

Class and Section: B.Sc.(Hons)Physics 3rd sem

Subject:Computer Fundamentals and Programming-I(Code:Phy-306)

Name of the Faculty : Monika

Lecture	Topics
1	Introduction to Syllabus, Scheme of Exam & Learning
2	Test to Check the Learning Level of the Students
3	Basic Components of computer system
4	Their function and inter-types of computer systems
5	Brief idea of data storage
6	Input Devices
7	Output Devices
8	Hexadecimal number system and arithmetic
9	Microprocessor architecture and operations(intel 8085/8086)
10	Functional block diagram
11	Memory organisation and addressing
12	memory interfacing
13	Input/Output instruction cycle(timing diagram)
14	8085 instruction set and format:Data transfer group
15	Arithmetic group
16	Logical group
17	Branch Control group
18	I/O and machine control group
19	Programming algorithm and flowchart
20	Assembly language
21	RIM and SIM
22	Addressing modes
23	Simple programming excercises(addition and multiplication,both 8 &16 bit)
24	Introduction to Fortran
25	Problem solving using Fortran
26	Data types:Integer and Floating point arithmetic
27	Fortran Variables:Real and Integer Variables
28	Input and output statements
29	Formats
30	Expressions
31	Built-in functions
32	Executable and non -executable statements
33	Control statements
34	Go To statement
35	Arithmetic IF and logical IF statement
36	Flow charts
37	Truncation errors
38	Round off errors
39	Propagation of errors
40	Block IF statement

41	Do statement
42	Character and data management
43	Arrays and subscripted variables
44	Subprogrammes:Function &Subroutine
45	Double precision
46	Complex numbers
47	Common statement
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