

Teaching Plan
Academic Year 2015– 2016

Class: **B.Sc. I year**

Semester: **I**

Subject: **Physics**

Paper No.: **I (PHY – 101)**

Period per week: **3 Period**

Weeks (Total):**15**

Week	Topics to be covered
1.	<u>Mechanics:</u> Compound Pendulum, Kater's Pendulum,
2.	Newton's law of Gravitation, Gravitational field, Potential , G. P. of mass
3.	Gravitational Potential and field due to spherical shell & solid sphere.
4.	Problems on topic mechanics.
5.	<u>Elasticity:</u> Elastic constants, twisting couple on a cylinder.
6.	Bending of Beam, Bending moment, Cantilever.
7.	Depression of beam loaded at centre, problems on topic.
8.	<u>Viscosity and Surface Tension:</u> Energy of liquid, Bernoulli's theorem.
9.	Applications of Bernoulli's theorem, poiseuille's formula.
10.	Surface tension; Introduction, pressure difference across curved surface.
11.	S. T. By Jeager's method, Problems on topic.
12.	<u>Ultrasonics and Acoustics:</u> Piezoelectric effect and generator,
13.	Magnetostriction effect and generator, applications of Ultrasonic.
14.	Reverberation, Sabine's law, conditions, problems on topic.
15.	Revision.

Teacher's Signature
(Dr. S. A. Hafiz)

H. O. D's Signature

Teaching Plan
Academic Year 2015 – 2016

Class: B.Sc. I Year

Semester: I

Subject: Physics

Paper No: (PHY – 102) Periods per weeks: Th.; Pract. Weeks (Total) :

WEEKS	TOPICS TO BE COVERED
1	1) Thermal Conductivity: -Transference of heat, Coefficient of thermal conductivity
2	Rectilinear flow of heat along a metal bar, Methods of radial flow of heat-(i)spherical shell method and (ii)Flow of heat along the wall of a cylindrical tube,
3	Comparison of conductivities of different metals, Thermal conductivity of bad conductor by Lees and Charltons method, Cylindrical tube method-conductivity of rubber.
4	2) Real Gases and Transport Phenomena: - Real Gases – Introduction, Reason for modification of gas equation, Van der Waals equation of state , comparison with experimental curves
5	Critical constants, constants of Van der Waals equation. Transport phenomena –Introduction, Mean free path, sphere of influence, and expression for mean free path.
6	Variation of mean free path with temperature and pressure, transport phenomena, viscosity, Thermal conductivity (their interrelationship, dependence on temperature and pressure).
7	3) Thermodynamics: - Adiabatic process, Adiabatic equation of a perfect gas, Isothermal process, Indicator diagram
8	Work done during isothermal process and adiabatic process, reversible and irreversible process
9	Second law of thermodynamics. (Kelvin and Clausius statement), Heat engines,
10	Carnot's ideal heat engine, Carnot's cycle (work done and Efficiency). Problems
11	4) Entropy and Thermodynamic relations: - General notation of entropy, change of entropy is independent of path
12	Change of entropy in reversible and irreversible process, Formulation of second law in terms of entropy, Maxwell's thermodynamical relations,
13	Applications of Maxwell's relations –i) Clausius – Clapeyron equation , ii) T-ds equations.
14	Problems.
15	REVISION

Teacher's Signature

H.O.D.'s Signature

Teaching Plan
Academic Year 2015-2016

Class:- B.Sc. First Year

Semester:- Ist

Subject:- Electronics

Paper:-I (ELE-101)

Weeks (Total):- 6 theory + 6 Practical

Total Weeks:

WEEKS	TOPICS TO BE COVERED
1.	Component and network theorem. Introduction, active component passive component.
2.	Resistor, capacitor.
3.	Inductor, Relay, Fuses
4.	Voltage divider theorem, current divider theorem ideal constant-voltage source. Ideal constant current. Max power, theorem
5.	Super position theorem. Thevenins theorem. Max power, theorem.
6.	Diodes. P- N Junction diode. Biasing a Semiconductor diode. Static and dynamic resistance of diode.
7.	Break down of P-N Junction, ideal diode. Special diode
8.	Zener diode. Tunnel diode, Varactor diode, LED + photo diode.
9.	Transistors. Transistor action. Transistor symbol.
10.	Characteristics of transistor in Common base, common emitter common collector configuration.
11.	Comparism of CE, CB, and CC configuration , transistor current gain and β , Relation between α and β .
12.	JFET, Characteristics. Parameter, MOSFET.
13.	Power supplies. Block diagram of regulated power supply HWR,FWR
14.	Bridge rectifier, efficiency of FWR, ripple factor, filters zener diode as voltage regulator. Transistor Series voltage regulator
15.	REVISION

Teacher's Signature
Dr. J. M.Pathan

H.O.D.'s Signature

Teaching Plan
Academic Year 2015-2016

Class: B.Sc. First Year

Semester: I

Subject: Electronics

Paper No.: II (ELE-102)

Period/Week: Theory: 03

Total Weeks: 15

WEEKS	TOPICS TO BE COVERED
1.	Number System: Decimal, Binary, Hexadecimal Number Systems and their inter Conversions.
2.	Number System: Decimal, Binary, Hexadecimal Number Systems and their inter Conversions.
3.	Binary arithmetic (addition, subtraction, multiplication and division), 1's and 2's compliment method for binary subtraction, subtraction.
4.	Hexadecimal addition and subtraction, 8421 (BCD) code, Gray code, Excess-3 code.
5.	BCD addition and subtraction
6.	Logic Gates (NOT gate, AND gate, OR gate, NAND gate, NOR gate) using diodes & transistors.
7.	Logic Gates (NOT gate, AND gate, OR gate, NAND gate, NOR gate) using diodes & transistors.
8.	Gate propagation delay time, Power dissipation, Loading considerations.
9.	Boolean Operations, Rules and laws of Boolean algebra.
10.	DeMorgan's theorems, minterms, maxterms, SOP and POS form of Boolean expressions.
11.	Simplification of Boolean Expressions, Karnaugh map [K-map] (up to four variables only).
12.	AND-OR logic, AND-OR-NOT logic, Ex-OR gate, Ex-NOR gate, NAND and NOR gate as universal building blocks,
13.	Half adder, Full adder, Half subtractor, Full subtractor, 4 bit parallel adder and subtractor,
14.	Binary decoder, decimal to BCD encoder, 8 to 1 multiplexer, 1 to 8 demultiplexer
15.	Revision

Teacher's Signature

H. O. D.'s Signature