Name Of the Faculty:-Ms. Kavita Rathee
Discipline:-Applied Science
Year:-Ist
Subject:-Physics
Lesson Plan Duration:-30 weeks((from 18Oct. 2021 to 30 June 2022))
** Work Load(Lecture/Practical) per week(in hours):-Lectures -02,Tutorial-01,Practicals-02

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical Day	Topic
Ist	Ist	Unit1:-Units and Dimensions:-Definition of Physics ,Physical Quantities(Fundamental and Derived)	Ist	1. To find Diameter of solid cylinder using a vernier calliper(Group-I)
	2nd	Units:Fundamental and Derived units		
	3rd	Tutoria-Problems of above topics	2nd	1. To find Diameter of solid cylinder using a vernier calliper(Group-II)
2nd	4th	Systems of units:CGS,FPS,MKS,SI,Definition of dimensions	3rd	2. To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume(Group-I)
	5th	Dimensional Formula and SI units of physical Quantities(Distance,Displacement,Area,Volume,Velocity,Accleration,Momentum,Force,Impulse,Work,Power,Energy,Pressure,Surface Tension,Stress,Strain)		
	6th	Tutorial-Problems of above topics	4th	2. To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume(Group-II)
3rd	7th	Principle of Homogenity of dimensions and Dimensional Equations	5th	3. To find the diameter of wire using screw gauge(Group-I)
	8th	Problems related with above topics.		
	9th	Tutorial-Problems of above topics	6th	3. To find the diameter of wire using screw gauge(Group-II)
4th	10th	Dimensional Equations,Applications of Dimensional Equations	7th	4. To find thickness of paper using screw gauge(Group-I)
	11th	Checking of correctness of equation		
	12th	Tutorial-Problems of above topics	8th	4. To find thickness of paper using screw gauge(Group-II)
5th	13th	Unit2:-Force and Motion:-Scalar and vector quantities(Definition and examples),addition of vectors,triangle and parallelogram law(statement only)	9th	5. To determine the thickness of glass strip using a spherometer(Group-1)
	14th	Scalar and vector product(statement and formula only),Definition of distance,displacement,speed,velocity and accleration.		
	15th	Tutorial-Problems of above topics	10th	5. To determine the thickness of glass strip using a spherometer(Group-II)
6th	16th	Force and its units,concept of resolution of force,Newton's law of motion(statement and examples)	11th	6. To determine radius of curvature of a given spherical surface by a spherometer.(Group-I)
	17th	Linear Momentum,Conservation of Momentum(Statement only),Impulse		
	18th	Tutorial-Problems of above topics	12th	6. To determine radius of curvature of a given spherical surface by a spherometer.(Group-II)
7th	19th	Circular Motion:Definition of Angular Displacement,Angular Velocity,Angular Accleration,Frequency,Time Period,Relation between linear and angular velocity.	13th	7. To verify parallelogram law of forces(Group-I)
	20th	Centipital and Centrifugal Forces(Definition and Formula only),Application of Centripital force in Banking of roads(Derivation for angle of banking)		
	21st	Tutorial-Problems of above topics(Assignment-1)	14th	7. To verify parallelogram law of forces(Group-II)

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	Lecture day	Topic (including assignment/test)	Practical Day	Topic
8th	22nd	Revision	15th	Revision
	23rd	Revision		Revision of above seven practicals/Checking of files and Viva(Group-I)
	24th	Revision	16th	Revision of above seven practicals/Checking of files and viva(Group-II)
	25th	Revision		
9th	26th	First Sessional Test	17th	First Sessional Test
	27th	First Sessional Test	18th	First Sessional Test
	28th	First Sessional Test		First Sessional Test
10th	29th	Tutorial-Problems of above topics	19th	9. To determine force constant of spring using Hook's Law(Group-I)
	30th	Unit:-Work,Power and Energy:-Work(Definition,Symbol,Formula and SI units),Energy(Definition and its units),Examples of Transformation of Energy		
	31st	Kinetic Energy(Formula,Examples and its Derivations),Potential energy(Formula,Examples and	20th	9. To determine force constant of spring using Hook's Law(Group-II)
	32nd	Law of Conservation of Mechanical Energy for freely falling bodies(with derivations)		
11th	33rd	Unit4:-Rotational Motion:-Rotational Motion with examples,Definition of Torque and Angular Momentum and their examples.	21st	8. To determine the atmospheric pressure at a place using Fortin's barometer.(Group-I)
		Conservation of Angular Momentum(Quantitative) and its examples,Moment of Inertia and Physical significance,Radius of Gyration(Definition,Derivation and formula)		
	34th	Tutorial-Problems of above topics		8. To determine the atmospheric pressure at a place using Fortin's barometer.(Group-II)
		Elasticity,Deforming force,Restoring force,Examples of Elastic and Plastic bodies,Definition of stress and	22nd	
12th	35th	Power(Definition,Formula and units),Simple Numerical problems based on formula of power.	23rd	10. Measuring Room Temperature with the help of Thermometer and its conversion in different scales.(Group-I)
		Hook's Law,Modulus of Elasticity(Young's,Bulk Modulus and shear),Pressure(Definition,Formula,Unit),Pascal's Law.		
	36th	Tutorial-Problems of above topics	24th	10. Measuring Room Temperature with the help of Thermometer and its conversion in different scales.(Group-II)
13th	37th	Surface Tension(Definition,its units),Applications of surface tension,Effect of Temperature on surface tension	25th	11.To find the time period of a simple Pendulum (Group I)
	39th		26th	11.To find the time period of a simple Pendulum (Group II)
14th	40th	Tutorial-Problems of above topics	27th	Revision of above four practicals/Checking of files and Viva(Group-I)
	41st			
	42nd	Tutorial-Problems of above topics(2nd Assignment)	28th	Revision of above four practicals/Checking of files and viva(Group-II)

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical Day	Topic
15th	43rd	Revision of Sessional Test syllabus	29th	Revision
	44th	Second Sessional		Second Sessional
	45th	Second Sessional	30th	Second Sessional
		Second Sessional		Second Sessional
16th	46th	Unit6:Heat and Temperature:-Definition of Heat and Temperature(on the basis of kinetic theory),Difference between Heat and temperature,Principles of measurement of Temperatue	31st	12. To verify Ohm's laws by plotting a graph between voltage and current (Group I)
	47th	and Radiation with Examples),Properties of Heat Radiation,Different scales of Temperature and their Relationship.		
	48th	Tutorial-Problems of above topics	32nd	12. To verify Ohm's laws by plotting a graph between voltage and current (Group II)
17th	49th	Unit7:-Wave Motion and its Applications:-Wave Motion,Transverse and Longitudinal wave Motion with examples,Terms used in wave motion like displacement ,amplitude,time period,frequency,wave length,wave velocity.	33rd	13. To verify laws of resistance in series combination (Group I)
	50th	Relationship among wave velocity,frequency and wave length,simple harmonic motion,definition,examples,cantilever(definition,form		
	51st	Tutorial-Problems of above topics(3rd Assignment)	34th	13. To verify laws of resistance in series combination (Group II)
18th	52nd	Free,forced and resonant vibrations with examples,acoustics of buildings-reverberation,reverberation time,echo,noise,coffecient of absorption of sound,methods to control reverbation time.	37th	14. To verify laws of resistance in parallel combination. (Group I)
	53rd	Ultrasonics: Introduction and their Engineering applications(cold welding,drilling,SONAR)		
	54th	Tutorial above topics	38th	14. To verify laws of resistance in parallel combination. (Group II)
19th	55th	Unit8:-Optics:-Reflection and Refraction with laws,Refractive Index,Lense formula(no derivation),power of lense(related numerical problems)	35th	15.To determine and verify the time period of cantilever (Group I)
	56th	angle and conditions for total internal		
	57th	Tutorial-Problems of above topics	36th	15.To determine and verify the time period of cantilever (Group II)
20th	58th	Unit:-9:-Electrostatics:-Electric charge,unit of charge,conservation of charge,coulombs law of electrostatics.	39th	Revision of above four practicals/Checking of files and Viva(Group-I)
	59th	properties),electric field intensity due to a point charge		
	60th	Tutorial-Problems of above topics	40th	Revision of above four practicals/Checking of files and viva(Group-II)
21st	61st	Definition of electric flux,Gauss law(statement and derivation),Capacitor and capacitance(with formula and units),series and parallel combinations of capacitors(simple numerical problems)	41st	16. To find resistance of galvanometer by half reflection method. (Group I)
	62nd	Revision of above units		
	63rd	Tutorial-Problems of above topics	42nd	16. To find resistance of galvanometer by half reflection method. (Group II)

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical Day	Topic
22nd	64th	Unit10:-Current Electricity:-Electric Current and its unit,Direct and alternative current,Resistance,Specific resistance and conductance(Definition and units)	43rd	17. To verify laws of reflection of light using mirror. (Group I)
	65th	Series and parallel combination of resistances,Ohm's Law(statement and formula)		
	66th	Tutoria-Problems of above topics	44th	17. To verify laws of reflection of light using mirror. (Group II)
23rd	67th	Heating effect of current,Electric power and its units,Krcchhoff's Laws(statement and formula)	45th	18. To verify the laws of refrection using glass slab.(Group-I)
	68th	Unit11:-Electromagnetism:-Introduction to Magnetism ,Types of Magnetic materials,Dia,para and ferromagnetic with examples		
	69th	Tutorial-Problems of above topics	46th	18. To verify the laws of refrection using glass slab.(Group-II)
24th	70th	Magnetic field,Magnetic intensity,Magnetic lines of force,Magnetic Flux and their units,Electromagnetic Induction(Definition)	47th	Revision of above three practicals/Checking of files and Viva(Group-I)
	71st	Unit12:-Semiconductor Physics:-Definition of Energy level,Energy bands,Types of Materials(Insulator,Semiconductor,Conductor)with examples,Intrinsic and extrinsic semiconductors.		
	72nd	Tutorial-Problems of above topics	48th	Revision of above three practicals/Checking of files and
25th	73rd	p-n junction diode and its characteristics	49th	19. To find the focal length of a concave lense,using a convex lense.(Group-I)
	74th	rectifier(center tap only),Semiconductor		
	75th	Tutorial-Problems of above topics	50th	19. To find the focal length of a concave lense,using a convex lense.(Group-II)
26th	76th	Unit13:-Modern Physics:-Lasers:Full form,Principle,spontaneous emission,stimulated emission,population inversion	51st	20. To study colour coding scheme of resistance (Group I)
	77th	Engineering and medical application of lasers		
	78th	Tutorial-Problems of above topics(4th Assignment)	52nd	20. To study colour coding scheme of resistance
27th	79th	Fiber optics:Introduction to Fibre optics(Definition,Parts),Applications of optical fibres in different fields.	53rd	Revision. Group-1
	80th	Introduction to Nano Technology(Definition of Nano materials with examples)and its applications		
	81st	Tutorial-Problems of above topics(4th Assignment)	54th	Revision. Group-2
28th	82nd		55th	Revision. Group-1
	83rd	Revision		
	84th	Tutorial-Problems of above topics	56th	Revision. Group-2
29th	85th	Revision	57rd	Revision. Group-1
	86th	Revision		
30th		Revision	58th	Revision. Group-2
	87rd	Revision