

GOVT POLYTECHNIC SUNDERNAGAR
LESSON PLAN (Applied Physics -II theory)

Name of the Teacher - Monika Thakur (Lecturer in Physics)

Class: 2nd Sem. Comp. Engg. (April-July) 2021

Month	Week	Date	Name of the Chapter	Contents to be taught	Remarks
April	1st	5th to 10th April	1) Waves and vibrations	Introduction of waves and vibrations	
				Wave motion with examples, generation of waves by vibrating particles	
				Types of wave motion-transverse and longitudinal	
				Wave motion, velocity, frequency and wave length of a wave, Relations between wave velocity, frequency and wavelength.	
	2nd	12th to 17th April	1) Waves and vibrations	Simple harmonic motion definition, expression for displacement, velocity	
				expression for acceleration, time period, frequency in S.H.M	
				Free, forced and resonant vibrations with examples	
	3rd	19th to 24 April	2) Applications of sound waves	Numerical based on S.H.M	
				Sound waves, beats, doppler effect of sound	
				Apparent frequency, determination of apparent frequency (when the source of sound moving towards and away from stationary observer)	
				Acoustics of buildings-reverberation, reverberation time, echo, noise, coefficient of absorption of sound.	
	4th	26th April to 1st May	2) Applications of sound waves	Methods to control reverberation time. Simple numerical on reverberation time.	
Ultrasonics-production of ultra sonic waves by Magnetostriction method					
piezoelectric method					
engineering applications of ultrasonics					
5th	3rd May to 8th May	3) Light	Revision		
			Laws of reflection and refraction, Refractive index		
			Power of lens, Magnification of a lens		
			Total internal reflection and its applications, critical angle and conditions for total internal reflection.		
			Simple and compound microscope		
			6th	10th to 15th May	3) Light
			Coherent and non-coherent sources of light		
			Interference of light, superposition principle, constructive and destructive interference		

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			Revision
May	7th	17th to 22nd May	4) Electrostatics Class Test-1 Coulombs law, unit charge, Electric flux and Gauss's law Electric field intensity and electric potential at any point due to a point charge. Capacitance, Principal of capacitor.
	8th	24th to 29th May	4) Electrostatics capacitance of parallel plate capacitor Current, voltage and resistance, potential difference Series and parallel combination of capacitors Numerical based on combination of capacitor
June	9th	31st May to 5th June	5) DC Circuits Revision Current, voltage and resistance, potential difference. Electric power, electrical energy and their units. Ohm's law, specific resistance
	10th	7th June to 12 June	5) DC Circuits Series and parallel combination of resistors Effect of temperature on resistance, Kirchhoff's laws Numerical based upon combination of resistance Revision
	11th	14th to 19th June	6) Electromagnetism Magnetic field and its units. Biot-Savart law. Magnetic field around a current carrying straight conductor Revision
	12th	21st to 26th June	6) Electromagnetism Class Test-2 Force on a moving charge and current carrying conductor in a magnetic field. Classification of material on the basis of magnetism (dia, para and ferromagnetic materials). Revision
	13th	28th June to 3rd July	7) Semiconductor Physics Energy band, Definition of conductor, semiconductor and insulator on the basis of band theory Intrinsic and extrinsic semiconductors P-n junction diode and its characteristics Diode as rectifier-half

M. G. W. K. O.

July

July	14th 5th july to 10th july	7) Semiconduct	full wave rectifier.	
		8) Modern Physics	Lasers: concept of energy levels, ionization, excitation and de-excitation of laser	
			Spontaneous and stimulated emission, pumping scheme.	
			Revision	
	15th	12th july to 17th july		House Test
	16th	19th july to 24th july	8) Modern Physics	Population inversion. Ruby laser.
				He-Ne lasers
				Applications of laser, Optical fibre materials.
			Optical fibre and its types	
			Acceptance angle and numerical aperture, Light propagation in optical fibre.	
		Advantages of optical fibre over copper wires in communications.		
		Applications of optical fibre		
		Revision		

Subject Teacher:- Monika Thakur

Monika

(Applied Sc. & Hum.)

Manisha
09/04/19
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LESSON PLAN (Applied Physics- II Practicals)

Name of the Teacher -Monika Thakur (Lecturer in Physics)

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Sr.No.	Description of Practicals	Date		Remarks
		Group-1	Group-II	
1	To verify ohm's law.	Week - 1 5th to 9th April	Week - 1 5th to 9th April	
2	To verify laws of resistances in series .	Week - 2 12th to 17th April	Week - 2 12th to 17th April	
3	Viva	Week - 3 19th to 24th April	Week - 3 19th to 24th April	
4	To verify laws of resistances in parallel.	Week - 4 26th to 30th April	Week - 4 26th to 30th April	
5	To verify Kirchhoff's current voltage laws	Week - 5 1st to 7th May	Week - 5 1st to 7th May	
6	Viva	Week - 6 10th to 15th May	Week - 6 10th to 15th May	
7	To convert a galvanometer into an ammeter of a given range.	Week - 7 17th to 22nd May	Week - 7 17th to 22nd May	
8	To convert a galvanometer into a voltmeter of a given range.	Week - 8 1st to 5th June	Week - 8 1st to 5th June	
9	Viva	Week - 8 24th to 29th May	Week - 9 24th to 29th May	
10	To study characteristics of a P-N junction diode.	Week - 9 7th to 11th June	Week - 9 7th to 11th June	
11	To find the capacitance of a parallel plate capacitor.	Week - 10 14th to 19th June	Week - 10 14th to 19th June	
12	Viva	Week - 11 21st to 26th June	Week - 11 21st to 26th June	
13	Revision of practicals	Week - 12 28th June to 3rd July	Week - 12 28th June to 3rd July	
14	Revision	Week - 13 5th to 9th July	Week - 13 5th to 9th July	
15	Revision	Week - 14 19th to 24th July	Week - 14 19th to 24th July	

Teacher : Monika ThakurHOD/OIC Monika
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