

Course Code/Name : PH3254 –Physics for Electronics Engineering
Regulation : 2021

UPC – Student Planner

Slot	Unit .No	Name of the Unit	Questions	CO Mapping	Grade	
					A	B
1	IV	Optical properties of materials	1. P-N diode & Solar cell (8+8) 2. LED & OLED (8+8) 3. Laser diode (8) 4. Absorption emission and scattering of light in metals, insulators, semiconductors (12) 5. Optical data storage (8) 6. Carrier generation and recombination (8)	C110.4	1 2 3 4 5	6
2	II	Electrical and magnetic materials	1. Electrical and thermal conductivity (12) 2. Density of energy states (16) 3. Effective mass of an electron (10) 4. Paramagnetism in conduction electrons(8) 5. GMR devices & SQUIDS (12) 6. Exchange interaction (8) 7. Quantum interference (8) 8. Fermi Dirac distribution (8) 9. Tight binding approximation(8) 10. Magnetic classification (10)	C110.2	1 2 3 4 5 6	7 8 9 10
3	V	Nano Electronic Devices	1. Quantum Confinement.(12) 2. SET(10) 3. Carbon Nano Tube.(12) 4.SPINTRONICS & Spin FET.(10) 5. Zener Bloch Oscillator.(10) 6. Semiconductor Photonic Structure.(12)	C110.5	1 2 3 4 5 -	6
4	I	Crystallogar phy	1. SC, BCC, FCC(4+6+6) 2. Diamond (10) 3. NaCl, ZnS (8+8) 4. Miller indices – d Spacing (10) 5. Imperfections in crystal (10) 6. Use of Miller indices – Wafer flats & Notches (10)	C110.1	1 2 3 4 5	6
5	III	Semiconductor and transport physics	1. Intrinsic carrier concentration (16) 2. Carrier concentration of N-type & Variation of Fermi level with temperature (16) 3. Carrier concentration of P-type & Variation of Fermi level with temperature (16) 4. Hall effect 5. Schottky diode and Ohmic contact	C110.3	1 2 3 4	5

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I	Crystallography	1. SC, BCC, FCC(4+6+6) 2. Diamond (10) 3. NaCl, ZnS (8+8) 4. Miller indices – d Spacing (10) 5. Imperfections in crystal (10) 6. Use of Miller indices – Wafer flats & Notches (10)	C110.1	1 2 3 4 5	6
II	Electrical and magnetic materials	1. Electrical and thermal conductivity (12) 2. Density of energy states (16) 3. Effective mass of an electron (10) 4. Paramagnetism in conduction electrons(8) 5. GMR devices & SQUIDS (12) 6. Exchange interaction (8) 7. Quantum interference (8) 8. Fermi Dirac distribution (8) 9. Tight binding approximation(8) 10. Magnetic classification (10)	C110.2	1 2 3 4 5 6	7 8 9 10
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