



MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

I B.TECH I Sem Supply End Examination, July 2021

APPLIED PHYSICS

(ECE)

Time: 3 Hours.

Max. Marks: 70

Note: 1. Answer any FIVE questions.

2. Each question carries 14 marks and may have a, b as sub questions.

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|---|----|---|----|----|----|
| 1 | a) | What is Black body radiation? Explain in detail. | 7M | CO | BL |
| | b) | Derive an expression for Schrodinger's time independent wave equation. | 7M | CO | BL |
| 2 | a) | Derive an expression for De-Broglie's wavelength of an electron. | 7M | CO | BL |
| | b) | Explain Born's interpretation of the wave function. | 7M | CO | BL |
| 3 | a) | Discuss construction, principle of operation of BJT. | 7M | CO | BL |
| | b) | Distinguish between diffusion and drift. | 7M | CO | BL |
| 4 | a) | Write a note on Radiative and non-radiative recombination mechanisms in semiconductors | 7M | CO | BL |
| | b) | With neat diagram discuss construction and principle of LED. | 7M | CO | BL |
| 5 | a) | Explain formation of PN junction diode. | 7M | CO | BL |
| | b) | What is Solar cell? Explain | 7M | CO | BL |
| 6 | a) | With the help of suitable diagrams, discuss the principle, construction and working of He-Ne laser. | 7M | CO | BL |
| | b) | Derive an expression of Numerical Aperture. | 7M | CO | BL |
| 7 | a) | Describe the construction and working of Ruby laser. | 7M | CO | BL |
| | b) | Write the differences between dia, para and ferro magnetic materials. | 7M | CO | BL |
| 8 | a) | Write a note on Ferroelectrics. | 7M | CO | BL |
| | b) | Discuss domains theory of ferromagnetism. | 7M | CO | BL |