



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, November 2020

APPLIED PHYSICS

(ECE)

Time: 2 Hours.

Max. Marks: 70

Note: 1. Answer any FIVE questions.

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

- 1 a) What is Photoelectric effect? Explain in detail. 7M
b) Deduce normalized wave function for a particle moving in 1- D potential well. 7M
- 2 Show that the de-Broglie's wavelength $\lambda = \frac{12.26}{\sqrt{V}} \text{ \AA}$. 14M
- 3 a) Distinguish between diffusion and drift. 7M
b) Explain the V-I characteristics of P-N diode under various biasing conditions. 7M
- 4 With the help of suitable diagram describe Solar cell construction, principle and characteristics. 14M
- 5 a) Write a note on Dependence of Fermi level on carrier-concentration and temperature. 7M
b) Explain radiative and non-radiative recombination mechanisms in semiconductors. 7M
- 6 With the help of suitable diagram, explain the principle, construction and working of He-Ne laser. 14M
- 7 a) Write a note on Losses associated with optical fibers. 7M
b) What is Ferroelectricity? In detail explain its characteristics. 7M
- 8 Discuss Classification of magnetic materials. 14M