



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
ENGINEERING PHYSICS
(CIVIL & MECH)

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) Explain Transformation of scalars and vectors under Rotation transformation | 7M | C01 | BL5 |
| | b) Explain invariance of Newton's second law of motion | 7M | C01 | BL5 |
| 2 | a) Discuss Newton's equations of motion in polar coordinates | 7M | C03 | BL4 |
| | b) Define Newton's laws motion. | 7M | C02 | BL2 |
| 3 | a) Describe Complex number notation representation of simple harmonic motion. | 10M | C03 | BL6 |
| | b) Distinguish between mechanical and electrical oscillators. | 4M | C02 | BL4 |
| 4 | a) Discuss reflection and transmission of wave at a boundary. | 7M | C03 | BL6 |
| | b) Write a note on acoustic waves. | 7M | C03 | BL1 |
| 5 | a) Derive differential equation for damped harmonic oscillations and solve it. | 7M | C03 | BL5 |
| | b) Derive an expression of longitudinal wave equation. | 7M | C03 | BL6 |
| 6 | a) Explain Huygen's principle. | 7M | C03 | BL2 |
| | b) Give critical analysis of Young's double slit experiment. | 7M | C03 | BL4 |
| 7 | a) With neat diagram explain Michelson's interferometer. | 7M | C03 | BL6 |
| | b) Using well labelled energy level diagram, explain the working of Ruby laser. | 7M | C03 | BL6 |
| 8 | a) Differentiate between Step index and Graded index optical fiber. | 7M | C03 | BL4 |
| | b) Explain the principle and working of a CO ₂ laser. | 7M | C03 | BL5 |