



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech I Semester Supplementary Examinations, September 2023

ENGINEERING PHYSICS

(Common to CE & ME)

Subject Code:3B1AC

Maximum Marks: 60

Date:03.10.2023 Duration: 3 Hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define wave.
- 2 Differentiate between damped and undamped vibration.
- 3 What do you mean by the terms i) reflection ii) transmission of wave
- 4 Define absorption coefficient of a material
- 5 Describe the Huygens principle
- 6 Why the rings are circular shape in Newton's rings experiment
- 7 State Bragg's law.
- 8 Define Resolving power of grating.
- 9 What is population inversion
- 10 Define numerical aperture of an optical fibre

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 a) Define simple harmonic motion explain the terms time period, amplitude and phase of a wave. [5]
b) Explain the working of mechanical harmonic oscillator. [5]
OR
- 12 Discuss about the energy decay in damped harmonic oscillator. [10]
- 13 Derive transverse wave equation in a string. [10]
OR
- 14 a) Give an account of standing waves. [3]
b) Derive Sabine's formula for reverberation time of a hall. [7]
- 15 Describe the construction and working of a Michelson Interferometer. [10]
OR
- 16 a) Explain Young's double slit experiment. [5]
b) Difference between diffraction and interference. [5]
- 17 a) What do you mean by diffraction of light. [3]
b) Derive equation of Fraunhofer diffraction due to single slit. [7]
OR
- 18 Describe suitable diagram the Powder method for determination of crystal structure. [10]
- 19 a) Explain the construction and working of a He - Ne gas laser. [5]
b) Write the properties of laser. [5]
OR
- 20 a) Distinguish between light propagation in step index optical fiber and graded Index optical fiber. [5]
b) Write the applications of optical fiber. [5]

