Course Code: 2010007 **Roll No:** **MLRS- R20**

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 Section2(f) & 12(B)of the UGC act,1956

I B.Tech I Sem Regular End Examination, July 2021

ENGINEERING PHYSICS

(CIVIL & MECHANICAL)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Answer any FIVE questions.

1	a)	Explain the form invariance of Newton's second law	7M	CO	C2
	b)	Discuss in detail the various forces in nature	7M	CO	C2
2	a)	Deduce the equation of motion of a damped harmonic oscillator and obtain its solution. Discuss the condition under which the oscillations are over damped	10M	CO	C3
	b)	Bring out the similarities between mechanical and electrical simple harmonic oscillators	4M	CO	C3
3	a)	Discuss the factors which are affecting architectural acoustics and their remedies	10M	CO	C2
	b)	Write a note on Sabine's formula for reverberation	4M	CO	C1
4	a)	Explain the formation of Newton's rings. Obtain an expression for the diameter of dark rings in reflected system.	10M	CO	C2
	b)	Write a short note on diffraction grating-resolving power.	4M	CO	C1
5	a)	Explain the construction, principle and working of Ruby laser	7M	CO	C2
	b)	Describe different types of fibres by giving the refractive index profiles and propagation details	7M	CO	C2
6	a)	Describe the construction and working principle of Michelson's interferometer	7M	CO	C2
	b)	Explain in detail Newton's laws with suitable examples	7M	CO	C2
7	a)	What is meant by Pumping? Discuss various pumping process used in the creation of population inversion.	7M	CO	C3
	b)	Distinguish between step-index fibre and graded index fibre.	7M	CO	C3
8	a)	Describe a method to determine the sound absorption coefficient of a material.	7M	CO	C2
	b)	Evaluate the power absorbed by an oscillator	7M	CO	C3

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