Final : 10.12.21

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 Supply End Examination, December 2021

ENGINEERING PHYSICS

(CIVIL & MECHANICAL)

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

Note: 1. Answer any FIVE questions.

1	a)	Evaluate the Newton's equations of motion in polar coordinates	6M	CO1	C3
	b)	Derive an equation to transform scalars and vectors under rotatory motion.	8M	CO1	C3
2	a)	What are damped oscillations? Solve the differential equation of a damped harmonic oscillator and discuss specially the case when it is under damped condition	10M	CO1	C3
	b)	What are the characteristic elements of forced harmonic oscillator? Give their electrical equivalents	4M	CO1	C1
3	a)	What are the basic requirements of acoustically good hall? Explain in detail	10M	CO2	C2
	b)	Write a note on reverberation and reverberation time	4M	CO2	C1
4	a)	Derive an expression for the intensity distribution due to Fraunhofer diffraction at a single slit	10M	CO3	C3
	b)	What is diffraction grating? Briefly explain	4M	CO3	C2
5	a)	Explain the principle, construction and working of He-Ne laser.	10M	CO2	C2
	b)	Explain the light propagation through step-index fibre?	4M	CO3	C2
6	a)	Explain in detail the construction and working principle of Ruby laser	7M	CO4	C2
	b)	Discuss briefly various methods of acoustic quieting	7M	CO4	C2
7	a)	Distinguish between division of wavefront and division of amplitude	7M	CO4	C3
	b)	Deduce an expression for energy decay in damped harmonic oscillator	7M	CO5	C3
8	a)	What is numerical aperture of a fibre? Obtain an expression for numerical aperture	8M	CO5	C1
	b)	Discuss in detail phasor representation for simple harmonic motion and physical quantities	6M	CO	C2

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