MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

MLRS   Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

II B.Tech I Sem Supply End Examination, October 2021
ENGINEERING MECHANICS
(EEE)

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.

1	a)	Define Force? what are characteristics of a force	7M	CO1	BL1
	b)	What is meant by the force system? How do you classify	7M	CO1	BL1
2		The forces 20 N, 30 N, 40 N, 50 N and 60 N are acting at one of the angular points of a regular hexagon, towards the other five angular points, taken in order. Find the magnitude and direction of the resultant force	14M	CO1	BL3
3	a)	Define and explain the static and dynamic friction?	7M	CO2	BL2
	b)	Explain the working ot simple screw jack with neat sketch?	7M	CO2	BL2
4		A body, resting on a rough horizontal plane, required a pull of 180 N inclined at 30° to the plane just to move it. It was found that a push of 220 N inclined at 30° to the plane just moved the body. Determine the weight of the body and the coefficient of friction	14M	CO2	BL3
5	a)	Explain the terms centroid and moment of inertia of a body?	7M	CO3	BL2
	b)	Explain about the parallel and perpendicular axis theorem?	7M	CO3	BL2
6		A man of mass 60 kg dives vertically downwards into a swimming pool from a tower of height 20 m. He was found to go down in water by 2 m and then started rising. Find the average resistance of the water. Neglect the resistance of air	14M	CO4	BL3
7	a)	Explain The Newton's Second Law of Motion	7M	CO4	BL2
	b)	Differentiate the potential energy and kinetic energy?	7M	CO5	BL1
8		Explain about the D'Alembert's Principle with necessary equations?	14M	CO5	BL2

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