

CRM08	Rev 1.11	ME	30/03/2022
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CONTINUOUS INTERNAL EVALUATION - 3

Dept:ME	Sem / Div:1 st D,E & F	Sub:Elements of mechanical engineering	S Code:21EME15
Date:08/04/2022	Time:3:00-4:30pm	Max Marks: 40	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN	Questions	Marks	RBT	CO's
PART A				
1	a Explain the following with a neat sketch: Spur Gear & Bevel Gear. Explain their applications.	8	L2	CO4
	b In a crossed belt drive the difference in tensions between the tight and slack sides of the belt is 1000N. Find the tensions on the slack and tight sides, if the angle of contact is 160° and the coefficient of friction is 0.3.	6	L3	CO4
	c Explain Cartesian Robot Configuration with suitable 3D sketch. Also, write its advantages, limitations & applications.	6	L2	CO4
OR				
2	a Explain the following with a neat sketch: Helical Gear & Rack and Pinion. Explain their applications.	8	L2	CO4
	b A Simple gear train is made up of four gears A,B,C & D having 20,40,60 &70 teeth respectively. If the gear A is the main drive rotating at 500rpm clockwise, calculate the Speed of intermediate gears, Speed and direction of last follower and train value.	6	L3	CO4
	c Explain Cylindrical Robot Configuration with suitable 3D sketch. Also, write its advantages, limitations & applications.	6	L2	CO4

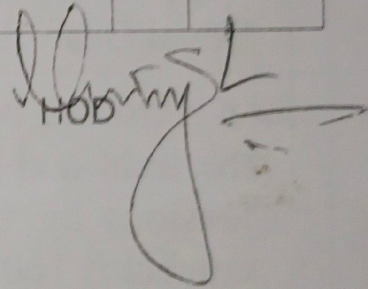
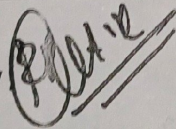
PART B

3	a	Explain the working principle of Lathe machine with a simple sketch showing major parts	8	L2	CO5
	b	Explain following operations performed on a lathe machine: Facing & Taper Turning	6	L2	CO5
	c	Write a note on Smart manufacturing and its importance	6	L2	CO5

OR

4	a	Explain the working principle of Horizontal milling machine with a simple sketch showing all the major parts.	8	L2	CO5
	b	Explain the working principle of CNC machine with a simple sketch and explain all the parts	6	L2	CO5
	c	Explain the differences between open and closed loop systems with a suitable sketch	6	L2	CO5

Prepared by



HOD