Code No: R20D1513 MALLA REDDY COLLEGE OF ENGINEERING & TECHNO (Autonomous Institution – UGC, Govt. of India)

M.Tech I Year II Semester Regular/Supplementary Examinations, November 2022 Mechatronics

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Roll No									

Time:	Time: 3 hoursMax. Marks: 70				
		Answer Any Five Questions All Questions carries equal marks. ***			
1	A B	Explain feed back control system with neat diagram. What are the advantages and disadvantages of mechatronic system?	[7M] [7M]		
2	A B	Explain wit diagrams important transducer actuating mechanisms. Sketch and explain the response of a first order system when subject to step input signal	[7M] [7M]		
3	A B	What is the difference between JFET and BJT? Explain Explain the construction and working of a TRAIC with a neat diagram also mention the applications of TRAIC.	[7M] [7M]		
4	A B	Explain the working of electrical and electronic amplifiers. Write a short notes on MEMS.	[7M] [7M]		
5	A B	What are the basic elements of the hydraulic system? Explain Explain pressure relief valves and flow control valves.	[7M] [7M]		
6	A B	State the difference between machine and mechanism. With a neat sketch explain the armature voltage control method.	[7M] [7M]		
7		Explain with a neat diagram the architecture of a programmable logic controller	[14M]		
8		Explain with a neat sketch various steps involved Design of Mechatronics systems.	[14M]		

Code No: R20D1509 MALLA REDDY COLLEGE OF ENGINEERING & TECHN((Autonomous Institution – UGC, Govt. of India)

M.Tech I Year II Semester Regular/Supplementary Examinations, November 2022 Advanced Mechanics of Machinery

(MD) Roll No

Time: 3 hours		Max. Marks: 70							
		Answer Any Five Questions All Questions carries equal marks. ***							
1	A B	What is inflection circle? What is the use of inflection circle? List out various methods to draw inflection circle for mechanisms and explain any two methods in detail.	[4M] [10M]						
2	А	Explain the Hartmann's Construction procedure with the help of neat sketches	[7M]						
	В	Explain the application of the Inflection circle to kinematic analysis.	[7M]						
3	А	What do you mean by a coupler motion in kinematics and discuss its	[7M]						
	В	With the help of neat sketches, explain the relative motion of the output and input links.	[7M]						
4	А	Discuss the importance of Carter –Hall circle.	[7M]						
	В	What are coupler curves? Explain how do you draw a coupler curve?	[7M]						
5	А	What is a four-bar linkage system? Where are four-bar linkages used? Explain	[7M]						
	В	Explian the procedure of guiding a body through Two distinct positions.	[7M]						
6		Explain the importance and applications of Burmester's curve	[14M]						
7	А	What is the function of generation? What are the advantages of function	[6M]						
	В	Explain Roberts's theorem and its significance.	[8M]						
8	А	How many instantaneous centers are possible in a four-bar chain mechanism? Explain.	[10M]						
	В	What is four-bar mechanism system?	[4M]						

Code No: R20D1514 MALLA REDDY COLLEGE OF ENGINEERING & TECHNO (Autonomous Institution – UGC, Govt. of India)

M.Tech I Year II Semester Regular/Supplementary Examinations,November2022 Computer Integrated Manufacturing (MD)

(INID)										
Roll No										

Time: 3 hours Max. Marks: "				
		Answer Any Five Questions All Questions carries equal marks. ***		
1	a b	Explain advantages of Computer Integrated Manufacturing? Explain the role of Group technology in CAD/CAM?	[7M] [7M]	
2	a b	Explain different types of Automation? Define Product Cycle?	[10M] [4M]	
3	a b	What is Computer Aided Process Planning? Explain the any two Approaches to Process planning?	[4M] [10M]	
4		Name the seven decisions and details that are usually included within the scope of the Process Planning?	[14M]	
5		Define Cellular Manufacturing? What is the objective of JIT production system?	[14M]	
6	a b	What is production control? Explain the difference between aggregate production plan and the master production schedule?	[3M] [11M]	
7	a h	Compare Contact and Non-Contact inspection methods? Explain any two methods of Non-Contact inspection?	[10M] [4 M]	
8	0	What is Flexible manufacturing System? Explain the types of Flexible manufacturing systems?	[14M]	

Code No: R20D1510 MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL (Autonomous Institution – UGC, Govt. of India) M.Tech I Year II Semester Regular/Supplementary Examinations,November2022

Experimental Stress Analysis (MD)

Roll No										

Time: 3 hoursMax. Marks: 70				
		Answer Any Five Questions		
		All Questions carries equal marks.		
1		What are the various types of strain gauges used in strain measurement? Also explain semiconductor strain gauge circuits with its neat sketch?	[14M]	
2	A B	What is a plane stress? Give an example. Explain various types of electrical resistance strain gauges.	[4M] [10M]	
3	A	Explain the importance of static recording and data logging system also write their any two practical applications?	[10M]	
	В	What do you mean by data logging? Give an example	[4M]	
4		Explain importance of dynamic recording in low and high frequencies.	[14M]	
5	A B	Explain the test procedures for brittle coatings analysis in detail. Explain how do you analyse the brittle coating data.	[10M] [4M]	
6		What are the two techniques used for moire's-fringe analysis? Discuss the displacement approach in detail?	[14M]	
7		What is bright field and dark field? Explain in detail the bright and dark filed setup.	[14M]	
8		What is meant by coating sensitivity also write its any two practical applications?	[14M]	
