GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3161917   **Date:16/06/2022**
Subject Name:Computer Aided Manufacturing
Time:10:30 AM TO 01:00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

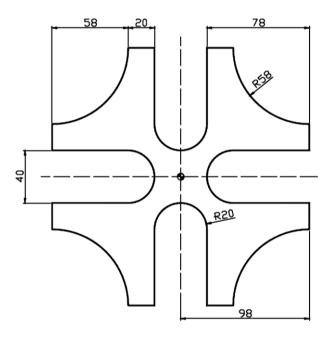|			MARKS
Q.1	**(a)**	Explain objective of CNC machine.	**03**
	(b)	Classify NC according to tool motion control system.	**04**
	(c)	Draw sketch of CIM enterprise wheel and compare with CIM wheel.	**07**
Q.2	**(a)**	Explain with neat sketch the operation of the canned cycle G81 as per ISO.	**03**
	(b)	Draw block diagram of PLC system and list the components of it.	**04**
	(c)	Prepare CNC milling part program for figure 1. (Thickness of plate is 15 mm)	**07**

Figure 1

OR

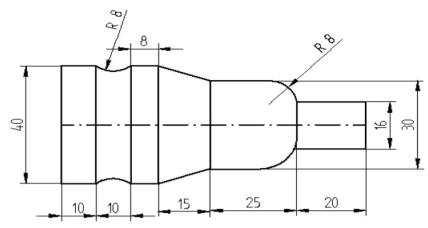|			
	(c)	Prepare CNC turning part program for figure 2.	**07**

Figure 2

Q.3	(a)	What are the reasons for the successful application of robots in manufacturing industries?	03
	(b)	Explain objectives of parts classification and coding.	04
	(c)	What is computer aided process planning? Explain benefits over traditional process planning.	07

OR

Q.3	(a)	What are the various types of motion control possible in robots?	03
	(b)	Explain how hybrid codes are generated?	04
	(c)	Explain variant and generative approaches of CAPP.	07

Q.4	(a)	What are the steps to successful ERP implementation?	03
	(b)	What type of data needed in order to develop a flexible manufacturing cell?	04
	(c)	How do you justify the acquisition of a robot for a given application based on economics?	07

OR

Q.4	(a)	What is an ERP System and why is it used?	03
	(b)	What are the steps needed to develop the flexible manufacturing cells from scratch?	04
	(c)	Explain different sensors used in robot with neat sketch.	07

Q.5	(a)	In order to achieve the goal of JIT, which approaches can be followed?	03
	(b)	Explain any four components of production planning and control.	04
	(c)	What are the various guidance methods available for automated guided vehicle?	07

OR

Q.5	(a)	What is the philosophy of Just In Time?	03
	(b)	Explain planning phase of production planning and control.	04
	(c)	Explain the major components are used in an automated storage and retrieval system.	07

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