

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019**

**Course Code: MR 308**

**Course Name: DIGITAL MANUFACTURING**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 5 marks.*

		Marks
1	Discuss the concept of CIM Wheel.	(5)
2	Explain about motion statements used in APT programming.	(5)
3	Mention the functions of a material handling system.	(5)
4	With an example discuss the role of encoders in industrial robotics.	(5)
5	Explain the working of piezoelectric force sensor.	(5)
6	Define online quality control.	(5)
7	Discuss the scope of MRP in manufacturing.	(5)
8	With a block diagram discuss about phases in shop floor control.	(5)

**PART B**

*Answer any three full questions, each carries 10 marks.*

9	With a suitable block diagram explain the elements of CIM.	(10)
10	(a) Differentiate CAD, CAD/CAM and CIM.	(7)
	(b) Mention the different types of applications of CAM.	(3)
11	Discuss in detail about advantages and disadvantages of NC systems.	(10)
12	Explain about the design considerations of a material handling equipments.	(10)
13	Describe the working of encoders and list any 2 applications of encoders in industrial robotics.	(10)

**PART C**

*Answer any two full questions, each carries 15 marks.*

14	With a suitable block diagram discuss about tool monitoring.	(15)
15	Compare the views of traditional and modern quality control.	(15)
16	(a) With suitable block diagrams differentiate material requirements planning with manufacturing resource planning.	(10)
	(b) Discuss the concept of agile manufacturing.	(5)
17	(a) "An automated manufacturing cell with two machine tools and robots is a	(5)

flexible cell". Comment on the statement.

- (b) With a neat sketch explain the concept of barcode technology. (10)

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