

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

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| 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.

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| 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.

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| 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)
