

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019

Course Code: MR401

Course Name: Advanced Automation Systems

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

Marks

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| 1 | Comment on the economic realities that are being faced by the modern manufacturing enterprises? | (5) |
| 2 | Differentiate between different modes of control system with the help of diagrams? | (5) |
| 3 | Explain material handling system? | (5) |
| 4 | List down the advantages of cellular manufacturing? | (5) |
| 5 | Define coordinate measuring machines and list its components | (5) |
| 6 | List any five features of measuring instruments and discuss its importance | (5) |
| 7 | Briefly describe flexible manufacturing system | (5) |
| 8 | Compare and contrast mass production with lean production | (5) |

PART B

Answer any three full questions, each carries 10 marks.

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| 9 | Explain the USA principle strategies | (10) |
| 10 | a) Explain the basic elements of an automated system with a diagram | (5) |
| | b) Compare the levels of automation in process industries and discrete manufacturing industries | (5) |
| 11 | Explain components of a manufacturing system and explain each component briefly? | (10) |
| 12 | a) What is cellular manufacturing? | (3) |
| | b) List and explain different stage of cellular manufacturing? | (7) |
| 13 | “Not all situations are better suited for automation”, Do you agree? Clarify your answer with adequate point | (10) |

PART C

Answer any two full questions, each carries 15 marks.

- 14 a) With a block diagram discuss the basic functions of a machine vision system (12)
b) Discuss the applications of machine vision system (3)
- 15 Describe about CMM construction with necessary sketches (15)
- 16 a) Compare lean production with agile manufacturing (7)
b) Describe about the types of flexible manufacturing systems and mentioned its features (8)
- 17 a) Define lean production (3)
b) Explain the four principles of lean production (12)
