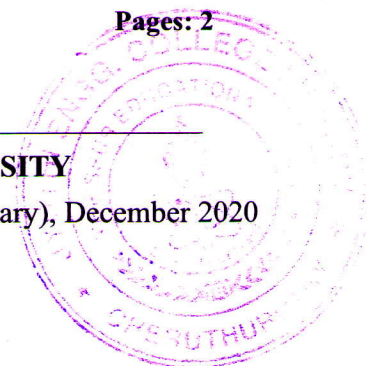


Reg No.: \_\_\_\_\_

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

**Course Code: MR401****Course Name: Advanced Automation Systems**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer all questions, each carries 5 marks.*

- |   |   | Marks |
|---|---|-------|
| 1 | Describe about contact inspection techniques.   | (5)   |
| 2 | Classify FMS workstations and give its features.  | (5)   |
| 3 | Define CMM. List the benefits of CMM.   | (5)   |
| 4 | Compare agile manufacturing with mass production.   | (5)   |
| 5 | Differentiate between different modes of control system with the help of diagrams.              | (5)   |
| 6 | List down the advantages of cellular manufacturing.   | (5)   |
| 7 | Comment on the economic realities that are being faced by the modern manufacturing enterprises. | (5)   |
| 8 | Explain material handling system.   | (5)   |

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

- |    |   |      |
|----|---|------|
| 9  | Discuss about the factors that are determining how the products are being manufactured. | (10) |
| 10 | Write a short note on error detection and recovery in an automated system.              | (10) |
| 11 | a) Briefly explain material handling system.  | (5)  |
|    | b) Briefly explain computer control system.   | (5)  |
| 12 | Explain group technology. List the application of group technology.                     | (10) |
| 13 | Explain survey of industry.   | (10) |

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

- |    |   |      |
|----|---|------|
| 14 | a) With a neat sketch describe about different types of illumination in machine vision. | (10) |
|    | b) Explain about the functions of machine vision system.                                | (5)  |

- 15 Describe about image acquisition and digitalization, image processing and analysis and interpretation. (15)
- 16 a) Define coordinate measuring machines. (3)  
b) Describe about six types of mechanical structure of CMM. (12)
- 17 a) Define FMS. (5)  
b) Describe about the types of flexible manufacturing systems and mentioned its features. (10)

\*\*\*\*