**18ME701**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **January, 2022** | **Mechanical Engineering** | | |
| **Seventh Semester** | **Automation in Manufacturing** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (1X10 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | Define Automation in production system. | | CO1 | |  | |
|  | b) | List out Four function of manufacturing support systems. | | CO1 | |  | |
|  | c) | What is Manufacturing? | | CO1 | |  | |
|  | d) | What are the three basic components of an NC machine? | | CO2 | |  | |
|  | e) | Define linear interpolation. | | CO2 | |  | |
|  | f) | Write applications of NC system. | | CO2 | |  | |
|  | g) | Define cellular manufacturing process. | | CO3 | |  | |
|  | h) | List out various types of machine cells. | | CO3 | |  | |
|  | i) | Write three basic components in FMS. | | CO4 | |  | |
|  | j) | List out elements in CIM. | | CO4 | |  | |
| **Unit –I** | | | | | | | |
| 2. | a) | Explain Automation principles and also write merits and demerits of automation system. | CO1 | | L2 | | 5M |
|  | b) | Discuss applications of automated production lines. | CO1 | | L2 | | 5M |
| **(OR)** | | | | | | | |
| 3. | a) | Discuss types of Automation in Automated manufacturing systems. | CO1 | | L2 | | 5M |
|  | b) | Explain various types of system configurations in Automated production lines. | CO1 | | L2 | | 5M |
| **Unit –II** | | | | | | | |
| 4. | a) | Write basic components of an NC system and explain briefly. | CO2 | | L2 | | 5M |
|  | b) | Differentiate Absolute and incremental positioning. | CO2 | | L3 | | 5M |
| **(OR)** | | | | | | | |
| 5. | a) | Explain features of computer numerical control system. | CO2 | | L2 | | 5M |
|  | b) | Discuss components in DNC system with neat sketch. | CO2 | | L2 | | 5M |
| **Unit –III** | | | | | | | |
| 6. | a) | Explain OPTIZ coding system with an example. | CO3 | | L3 | | 5M |
|  | b) | Discuss the concept of composite part with an example. | CO3 | | L3 | | 5M |
| **(OR)** | | | | | | | |
| 7. | a) | Discuss steps involved in production flow analysis. | CO3 | | L2 | | 5M |
|  | b) | List out types of CAPP system and explain process of retrieval CAPP system. | CO3 | | L2 | | 5M |
| **Unit –IV** | | | | | | | |
| 8. | a) | FindExplain FMS layout configurations with neat sketches. | CO4 | | L2 | | 5M |
|  | b) | Briefly explain benefits of CIM systems in manufacturing process. | CO4 | | L2 | | 5M |
| **(OR)** | | | | | | | |
| 9. | a) | Discuss functions of FMS Computer Control Systems. | CO4 | | L2 | | 5M |
|  | b) | Explain types of inspection methods with examples. | CO4 | | L3 | | 5M |

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