

December 2023  
B.Tech (ME) 7th Sem.

Automation in Manufacturing ( PCC-ME-701/21 )

Time: 3 Hours

Max. Marks:75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
  2. Answer any four questions from Part -B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART -A**

- Q1 (a) Define Manufacturing (1.5)  
 (b) Define Productivity (1.5)  
 (c) Define the applications of rotary feeder (1.5)  
 (d) Define the application of actuator (1.5)  
 (e) Define advanced automation function (1.5)  
 (f) Define the applications of material handling systems (1.5)  
 (g) Define the application of process industries (1.5)  
 (h) Define the applications of storage system (1.5)  
 (i) Define the function of valves (1.5)  
 (j) Define the applications of robots (1.5)

**PART -B**

- Q2 (a) Explain the principles and strategies of automation with suitable examples (10)  
 (b) Describe the concept of automation in production system with suitable example (5)
- Q3 (a) Discuss the components of Industry 4.0 and its applications (5)  
 (b) Explain the working of programme logic controller with suitable diagram (10)
- Q4 Explain the working of centrifugal type feeder with neat diagram and also mention its applications (15)
- Q5 (a) Discuss the applications of elevator type feeder (5)  
 (b) Explain the components of hydraulic and pneumatic system with suitable diagram (10)
- Q6 (a) Explain the working of different types of sensors with suitable applications (10)  
 (b) Discuss the concept of industry control systems with suitable example (5)
- Q7 Define AI. Explain the tools and applications of AI in Mechanical Engineering (15)

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