BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - VI Computer Science & Engineering AI & ML : SUMMER : 2025
SUBJECT: ITC-IV: ROBOTICS PROCESS AUTOMATION

Day : Tuesday
Date : 03/06/2025

S-23973-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q.1 Provide a detailed classification of industrial robots, outlining their types and applications in various industries. **(10)**

OR

Write about the historical development of robotics and its influence on industrial automation.

Q.2 Describe various types of robot joints and symbols and explain how the choice of joints affects the robot's movements and applications. **(10)**

OR

Analyse the resolution, accuracy and precision of robots and elucidate how these factors impact the performance of robotic systems in industrial settings.

Q.3 Highlight the roles and applications of process tools as end effectors in robotics. **(10)**

OR

Summarize the key factors and design considerations for selecting grippers in robotic applications.

Q.4 Define encoders. Discuss its types with the help of a diagram. Write down the advantages and disadvantages. **(10)**

OR

List down and explain types of sensors used in robots.

Q.5 Discuss the use of matrices in coordinate and vector transformations, emphasizing rotation matrix. **(10)**

OR

How are equations and relationships linked in the context of general mathematical preliminaries on vectors and matrices?

Q.6 Define and discuss motion interpolation in Robotics. **(10)**

OR

Find the word robot programming. Discuss the different keys aspect of the robot programming.

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