BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - VI COMPUTER SCIENCE & ENGINEERING AI & ML : SUMMER : 2024

SUBJECT: ITC-IV: ROBOTICS PROCESS AUTOMATION

Day : Thursday
Date : 30/05/2024

S-23973-2024

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) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Write about the historical development of robotics and its influence on industrial automation. **(10)**

OR

Q.1 Explain the significance of Asimov's laws of robotics and their application in the robotics field. **(10)**

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

Q.2 Explain the concepts of robot coordinates and reference frames, detailing their contributions to the accurate functioning of a robot. **(10)**

Q.3 Describe the applications of Three-Fingered Grippers and differentiate between internal and External Grippers in robotics. **(10)**

OR

Q.3 Explain the impact of Adaptive Grippers, Soti Robotics Grippers, and Tactile Sensor Grippers on robotic capabilities. **(10)**

Q.4 Define and Discuss the transducer. Distinguished between the sensors and Transducer. **(10)**

OR

Q.4 Discuss why does robots uses sensors? How Does a robotic sensor work? **(10)**

Q.5 How are equations and relationships linked in the context of general mathematical preliminaries on vectors and matrices? **(10)**

OR

Q.5 Explain the process of direct kinematics and its application in robotic systems. **(10)**

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

OR

Q.6 Discuss the robot cell consideration and selection of Robot. **(10)**

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