

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VIII MECHANICAL :SUMMER- 2022
SUBJECT : INDUSTRIAL AUTOMATION & ROBOTICS

Day : Wednesday
Date : 22-06-2022

S-13467-2022

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) Use of non – programmable **CALCULATOR** is allowed.
 - 4) Draw neat and labeled diagram **WHEREVER** necessary.
 - 5) Assume suitable data if necessary.
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- Q.1** Explain in detail Mechanization of parts handling. Give suitable example. (10)
OR
Compare the fixed, flexible and programmable automation with their advantages, disadvantages and industrial applications. (10)
- Q.2** Explain the ten strategies used for automation and process improvement. (10)
OR
What is mean by transfer lines in manufacturing system? Explain types of transport systems with neat sketches. (10)
- Q.3** Explain the different drive technologies used for robots. State advantages and disadvantages of these. (10)
OR
Explain the control methods used in robotics with their merits and demerits. (10)
- Q.4** State and explain in brief different types of sensors used in robots with their purpose. (10)
OR
Explain with neat sketch active and passive types of grippers. (10)
- Q.5** Derive the expression for forward and reverse kinematics for 2 DOF robot manipulator in 2 dimensions. (10)
OR
Explain forward and reverse kinematics of robot manipulator. Also define joint space and world space system. (10)
- Q.6** State the textual programming types. What are the advantages and disadvantages over the lead through programming method? (10)
OR
State and explain different applications of telechiric robots. (10)

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