

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - II R&AE :SUMMER- 2022
SUBJECT : FUNDAMENTALS OF ROBOTICS

Day : Wednesday
Date : 3/8/2022

S-24126-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use suitable data **WHEREVER** necessary.
- 4) Use **non-programmable** calculator.

- Q.1** What are the basic components of robot? Explain them with neat sketch. [10]
OR
- Q.1** a) Discuss present status and future trends of robot. [05]
b) What do you understand by accuracy, repeatability & resolution? [05]
- Q.2** What is end effector? How end effectors are classified? Discuss [10]
considerations in selection of grippers.
OR
- Q.2** Describe vacuum grippers and expandable bladder type grippers in detail. [10]
- Q.3** a) Discuss functions of drive systems. [05]
b) Compare hydraulic, pneumatic and electric Actuators. [05]
OR
- Q.3** Describe A. C. servo motors and D. C. servo motors with suitable sketches. [10]
- Q.4** Describe non-contact sensors in brief. [10]
OR
- Q.4** What are the different position and displacement sensors are used in robotics? [10]
Explain.
- Q.5** a) Discuss control system for robot joint. [05]
b) Describe various control actions. [05]
OR
- Q.5** Describe in detail encoder and resolver. [10]
- Q.6** How robots are used in processing operations? Explain in detail. [10]
OR
- Q.6** Describe the applications of robots in defense, medical and biomedical field. [10]

* * * * *