

Enroll No

Q.P. Code
UT 3083

**Unit Test - II (2025-26)**

S.Y. B.Tech.- Robotics and Automation

**Course Code: RA 201**

**Course Name: Fundamentals of Robotics and Automation**

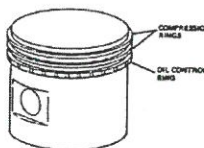
Day & Date: Thursday 18/09/2025

Time: 11:45 To 12:45

Max Marks- 25

- Instructions:**
- 1) All questions are compulsory.
  - 2) Figures in rounded ( ) brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
  - 3) CO is the index number of the Course Outcome statement.
  - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
  - 5) Assume suitable data if necessary.
  - 6) Use of non-programmable calculators is allowed

			Marks	BT Level	COs
Q.1	A	An industrial robot is used to lift a 50 kg load vertically using a constraint gripper. The gripper weighs 15 kg. If it moves with an acceleration of $g/2$ , what minimum payload must be specified for the robot (05 marks) ?	05	3	2
OR					
Q.1	A	Compare Mechanical grippers and Hydraulic grippers (05 marks) by considering an application for which these grippers are to be used.	05	3	2
Q.1	B	Consider an application where a Robot is used to pick and place the following object. Explain the factors to be considered for selection of a gripper (05 marks)) for this application. Select a suitable gripper (1.5 marks) and justify your selection (1.5 marks).	08	4	2



**Object : Piston made of an alloy**

Q.2	A	Distinguish between online programming and offline programming (06 marks)	06	3	4
Q.2	B	Draw a neat sketch (02 marks) and explain Manual lead through programming (04 marks).	06	2	4
OR					
Q.2	B	Draw a neat sketch (02 marks) and explain Power lead through programming (04 marks).	06	2	4

