

**B. Voc Robotics and Automation**  
**Subject: Kinematics and Dynamics of Robots**  
**Subject Code: ME-604**  
**Semester: Third**  
**Session: September 2022**  
**Theory (External): 35 Marks**  
**Time: 03 Hours**

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**Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of short answers type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything in the question paper.
6. Whenever necessary, the diagram drawn should be neat and properly labelled

**Roll Number**

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**SECTION – A (OBJECTIVE TYPE QUESTIONS)**  
(10 × 1 = 10 Marks)

- A. Define degree of freedom
- B. Differentiate between link and pair
- C. Define mechanism
- D. Define velocity
- E. Define momentum
- F. Define equivalent linkage
- G. Define moment of inertia
- H. Differentiate between force and torque
- I. Define acceleration
- J. Define interface

**SECTION – B (ESSAY TYPE QUESTIONS)**  
(5 × 5 = 25 Marks)

1. Discuss the concept of robotic mechanism with neat diagram
2. What is Inversion? Discuss the types of Inversions with neat diagram and applications.
3. Explain construction and working of slider crank mechanism with neat diagram

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4. Explain the concept of linear and angular velocity in plane motion with examples
5. Explain the laws of motions and describe the mass moment of inertia with examples
6. Discuss the concept of spatial mechanism with neat diagram
7. What is balancing? Describe the types of balancing with suitable diagram and applications.
8. Discuss the concept of micro controller programming and its applications.

END OF PAPER