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PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025

Time: 11.45am to 01.15pm

School: SOE	Program: B.Tech	
Course Code : MEC4002	Course Name: Kinematics of Machines	
Semester: V	Max Marks: 50	Weightage: 25%

CO - Levels	CO1	CO2	CO3	CO4	CO5
Marks	24	26			

Instructions:

- (i) *Read all questions carefully and answer accordingly.*
- (ii) *Do not write anything on the question paper other than roll number.*

Part A

Answer ALL the Questions. Each question carries 2marks.

5Q x 2M=10M

1	Define kinematic pair with an example.	2 Marks	L1	CO1
2	What is a kinematic chain? Give one example	2 Marks	L1	CO1
3	Define structure	2 Marks	L1	CO1
4	Define Mobility of a mechanism	2 Marks	L1	CO2
5	Write kutzbach formula	2 Marks	L1	CO2

Part B

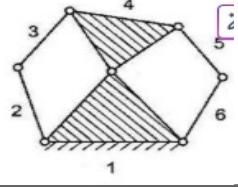
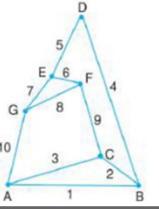
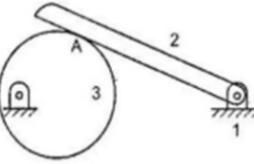
Answer the Questions.

Total Marks 40M

6.	With a neat sketch explain the kinematic pair based on the nature of relative motion	10 Marks	L2	CO1
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Or

7.	With a neat sketch explain the classification of constrained motion	10 Marks	L2	CO1
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8.	<p>Calculate the DOF for the following problems</p>   	10 Marks	L3	CO1
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a)

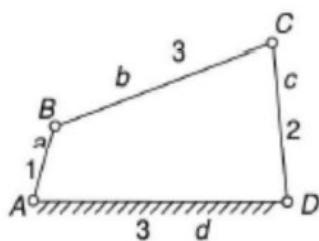
b)

c)

Or

9.	With a neat sketch explain the working principle of Oldham's coupling mechanisms	10 Marks	L3	CO1
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10.	Find the maximum and minimum transmission angle for the following mechanism	10 Marks	L3	CO2
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Or

11.	Find all each type of mechanism whether it is crank rocker or double crank or double rocker	10 Marks	L3	CO2
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12.	With a neat sketch explain the working principle of whit Whitworth quick return mechanisms	10 Marks	L2	CO2
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Or

13.	With neat sketch, explain the Ackerman steering gear of an automobile	10 Marks	L3	CO2
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