GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Engineering

M.TECH Mechanical Engineering in CAD/CAM and Robotics
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem III - MCCR6001 - Computer Aided Mechanism Design

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Describe the Grashof's crieteria to find DOF of a component for a mechanical system.	K1	(2)
2)	How can you identify inflection points in the motion of a mechanism using graphical or analytical methods?	K2	(4)
3)	How do you determine the number of degrees of freedom for a rigid body in two-dimensional space?	K2	(6)
4)	Compare and contrast the degrees of freedom in serial and parallel mechanisms.	K3	(9)
5)	Explain the concept of "center of rotation" and how it is related to the ICC in Path Curvature Theory.	K3	(9)
6)	What are the applications of Chebyshev polynomials in physics, engineering, and other scientific fields?	K5	(10)
7)	What is Hartmann's construction, and how is it used in the synthesis of planar linkages?	K4	(12)
8)	Explain the concept of "constraint equations" in the context of Gruebler's criterion and how they relate to the calculation of mobility.	K5	(15)
9)	Provide an example where Hartmann's construction is applied to synthesize a mechanism for a specific function.	K5	(15)
10)	How does the presence of prismatic (sliding) joints impact the application of Gruebler's criterion in determining mobility?	K6	(18)