School of Engineering

Department of Mechanical Engineering
Mid Term Examination

Exam Date: 26 Sep 2023
Time : 90 Minutes
Marks : 50

Sem III - MCCR6001 - Computer Aided Mechanism Design

Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1)	Describe the concept of "function generation" in type synthesis and its importance in creating specific types of motions.	K2	(2)
2)	Explain Grashof's criterion for four-bar linkages. How does it determine the range of motion for a mechanism?	K1	(3)
3)	Provide an example of a four-bar linkage and calculate the transmission angles at different positions during its motion.	K2	(4)
4)	Differentiate between "forward kinematics" and "inverse kinematics" in the context of mechanism analysis.	K2	(6)
5)	Explain the concept of "redundant degrees of freedom" in a mechanism and discuss its implications.	K3	(6)
6)	Define the transmission angle in a four-bar linkage. How does it affect the motion of the mechanism?	K3	(9)
7)	Consider a planar mechanism with three revolute joints and one prismatic joint. How would you determine its mobility using Gruebler's criterion?	K4	(8)
8)	Provide an example of a real-world application where Grashof's criterion is used to design a mechanism.	K4	(12)

OR

	What are the key factors considered in Gruebler's criterion for evaluating the mobility of mechanisms?	K4	(12)