# School of Computing Science and Engineering
Bachelor of Technology in Computer Science and Engineering
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem IV - G3UB420T - Mechanisms and Machines

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) What is the significance of the Grashof condition? — K2 (2)

2) List down the application of gear train. — K1 (3)

3) Illustrate the types of contrained motions with schematic diagram. — K2 (4)

4) Illustrate a situation where a cam mechanism would be preferred over a linkage mechanism. — K2 (6)

5) Describe a scenario where a higher pair linkage is preferred over a lower pair linkage and justify your choice. — K3 (6)

6) Show the mechanism given in the figures are Kinematic Chain os not, Justify your answer. — K3 (9)

and
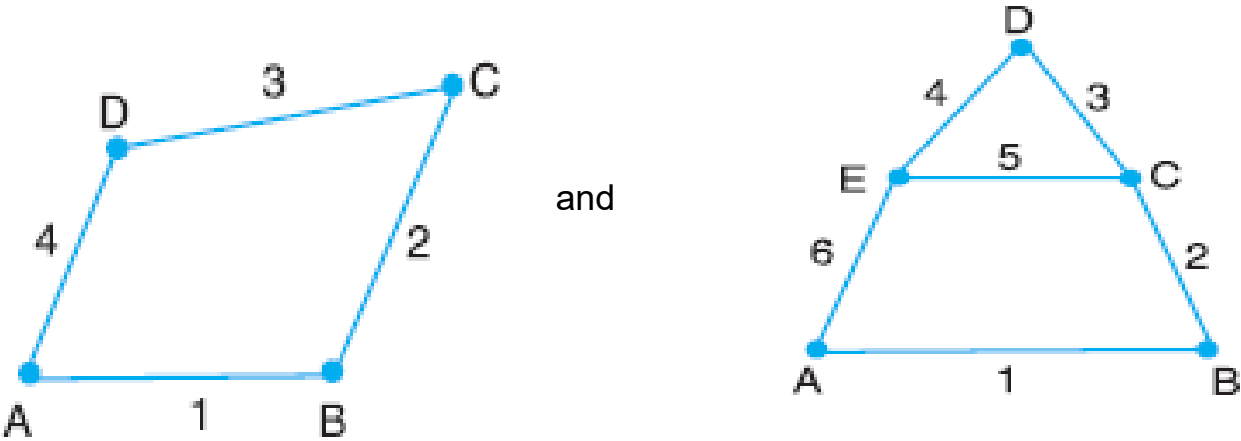
7) Present the Single Slider Crank Chain with schematic diagram and its application with example — K4 (8)

8) A crank and slotted lever mechanism used in a shaper has a centre distance of 300 mm between the centre of oscillation of the slotted lever and the centre of rotation of the crank. The radius of the crank is 120 mm. Find the ratio of the time of cutting to the time of return stroke.
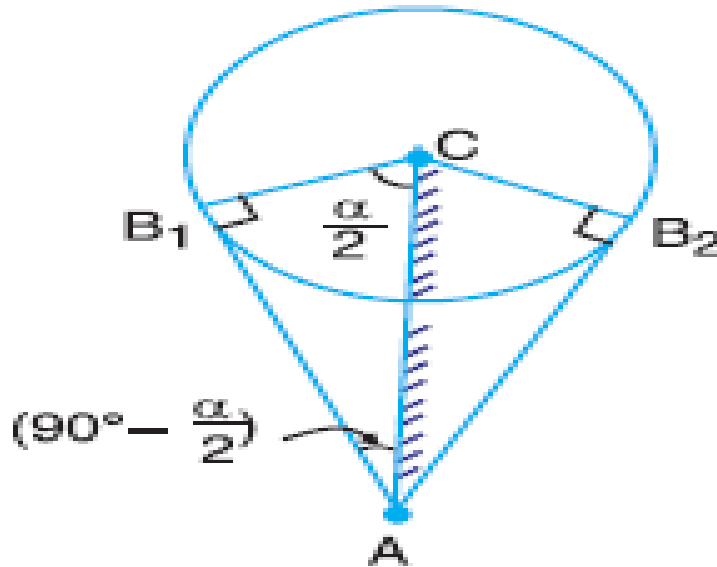
OR

Discuss the fundamental principles of gear design and the factors influencing the selection of gear types for specific applications, considering factors such as load capacity, speed requirements, and space constraints.