School of University Polytechnic

Diploma in Mechanical Engineering
Semester End Examination - Aug 2024

Duration : 180 Minutes
Max Marks : 100

Sem V - N1DL504C - Theory of Machine

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)	Define Instantaneous center.	K1(2)
2)	Explain Kennedy's theorem and its application in velocity analysis.	K2(4)
3)	Explain the concept of "Coriolis component of acceleration" and its application in steering gear.	K2(6)
4)	Identify types of kinematic pairs used in a single slider crank chain mechanism.	K3(9)
5)	Identify the importnace of "prime circle" in cam design and motion analysis.	K3(9)
6)	Evaluate the length of path of contact in a pair of meshed spur gears.	K5(10)
7)	Discuss the advantages and disadvantages of "spur gears" in mechanical systems.	K4(12)
8)	Evaluate the effects of link dimensions and angular velocities on the "velocity of a point" in a slider-crank mechanism.	K5(15)
9)	Evaluate the interference between gear teeth and propose measures to prevent interference during operation.	K5(15)
10)	Create a design for a rack and pinion mechanism to convert rotary motion to linear motion.	K6(18)