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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B. Tech II Year I Semester Supplementary Examinations August-2022****KINEMATIC OF MACHINERY**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a What is constrained motion and what are the different types of constrained motions? Give one example for each with suitable sketch. L1 6M
- b Explain the working of beam engine with neat sketch. L2 6M
- OR**
- 2 What are the practical applications of inversions of the single slider crank chain? Explain all with neat sketch. L1 12M

UNIT-II

- 3 a What is the condition for correct steering? Write fundamental equation of it. L1 6M
- b Sketch and explain the working of Grasshopper straight line mechanism. L4 6M
- OR**
- 4 Explain the working of any two of exact straight line mechanisms with suitable sketches. L1 12M

UNIT-III

- 5 a Define rubbing velocity at a pin joint. What will be the rubbing velocity at pin joint when the two links move in the same and opposite directions? L1 6M
- b Explain in detail, how the velocity of a point on a link can be found in the relative velocity method. L1 6M
- OR**
- 6 Explain with a suitable sketch how the velocities of links of a mechanism are found using the instantaneous centre method. L1 12M

UNIT-IV

- 7 a Draw the displacement, velocity and acceleration diagrams for a follower when it moves with uniform acceleration and retardation. L4 6M
- b Explain with suitable sketches the different types of followers. L1 6M
- OR**
- 8 Write short note on the following with suitable sketches: L4 12M
i. Cam ii. Offset follower iii. Radial follower iv. Mushroom follower

UNIT-V

- 9 Explain the classification of gears with suitable sketches. L1 12M
- OR**
- 10 a Explain the following terms: L1 6M
(i) Module, (ii) Pressure angle, (iii) Addendum (iv) Dedendum.
- b Discuss about 'interference' as applied to gears with suitable sketches. L2 6M

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