(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

FOURTH SEMESTER [B.TECH.] MAY-2010

Paper Code: ETME202	*Subject: KOM/DOM*
Paper Id: 36202	
Time : 3 Hours	*Maximum Marks :75*

Note: Q.1 is compulsory. Attempt one question from each unit.

Q1 (a) What is Grashof's Criterion and class I and class II 4-bar chains. **(5)**

(b) Explain the mechanism of face cam. **(5)**

(c) What is law of gearing? **(5)**

(d) What is dynamic equivalent of a connecting rod? **(5)**

(e) Prove that when Newton's third law of motion is applied to rotary motion that is to every active torque there is a reactive torque, is nothing by Gyroscopic Law. **(5)**

UNIT-I

Q2 In a four bar mechanism the fixed link is 4 units, input link one unit, output link 2.5 units and the coupler 5 units. When the input link is rotating anticlockwise and is at 30, 60, 90 from the fixed link, Calculate the output link angle using analytical method. **(12.5)**

Q3 For a quick return motion mechanism, mark all the instantaneous centres. **(12.5)**

UNIT-II

Q4 Design a cam profile for 10mm dia roller follower when the lift is 20mm and the follower lifts during 90^0 of cam rotation by uniform acen and retardation dwells for 60^0 and falls during 60^0 again with uniform acen and retardation. **(12.5)**

Q5 Deduce the mathematical formulation for logarithmic decrement. **(12.5)**

UNIT-III

Q6 What is law of gearing? Prove that for are involute profile for a pinion meshing with a rock the minimum number of teeth is 17 to avoid interference. **(12.5)**

Q7 What is the dynamic equivalent of connecting rod? **(12.5)**

UNIT-IV

Q8 How do we balance an unbalanced mass at the centre of roter at two end plates? A roter of length 100mm has two unbalanced masses of 10gm each at a phase angle of 60^0. Determine the balanced mass at its ends hear bearings. **(12.5)**

Q9 What is gyroscopic couple, how does it help to turn an aeroplane? **(12.5)**

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