

KERALA AGRICULTURAL UNIVERSITY
B.Tech (Food. Engg) 2011 Admission
IIIrd Semester Final Examination- January/February -2013

Cat. No: Meen.2105

Title: Kinematics of Machinery (2+1)

Marks: 80

Time: 3 hours

I Fill in the Blanks:-

(10X1=10Marks)

1. The.....of a mechanism is the ratio of output force to the input force.
2. A joint of two links having relative motion between them is known as
3. If a body is moving in circular path with uniform velocity, the body will have only acceleration.
4. The radius of a friction circle for a shaft of radius r rotating inside a bearing is
5. Ratio of tension on the two sides of a flat belt is given by $(T_1/T_2) = \dots\dots\dots$
6. Mitre gears are used for.....speed.
7. is the angle between the pressure line and common tangent to pitch circle
8. If the axes of first and last wheels of a compound gear coincide, it is called.....
9.is used to maintain speed of an engine within specified limits whenever there is variation of loads.
10. Is the zero displacement of the follower during the motion of cam.

II Write short notes on ANY TEN

(10X3=30Marks)

1. What is quick return mechanism? Where are they used?
2. Write a short note on antifriction bearing.
3. What is creep in belt drive?
4. What are the classifications of chains?
5. What do you mean by undercutting in gears?

6. State law of *Gearing*.
7. What is a Gear train? What are its main types?
8. What is stability and sensitiveness in governors?
9. Define the terms base circle, prime circle, and pitch curve?
10. What are the different types of followers?
11. What will be the harm if the rotating parts of a high speed engine which are not properly balanced?
12. Define Grashoff's law?

III Write short essays on ANY SIX

(6X5=30 Marks)

1. Describe various inversions of a single slider crank mechanism
2. How are kinematic pairs classified?
3. What are the various types of mechanical brakes?
4. What is centrifugal tension in belts? How does it affect the power transmitted?
5. What is interference? How it is prevented?
6. What are the important types of governors?
7. How cams are classified?
8. What is meant by static and dynamic unbalance in machinery? How can the balancing be done?

IV Write essay on ANY ONE

(1X10=10Marks)

1. Draw the displacement, velocity and acceleration diagram for a follower when it moves with constant acceleration and deceleration.
2. Explain with the aid of sketches different types of gears.