KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg.) 2016 Admission
II Semester Final Examination-July-2017

Fpme.1202 - **Theory of Machines (2+0)** **Marks: 50**
Time: 2 hours

I **Fill up the blanks** **(10x1=10)**

1 A kinematic chain is known as a mechanism when ----------
2 The lead screw of a lathe with nut form a ----------
3 The total number of instantaneous centre for a mechanism consisting of n links are ----------
4 The instantaneous centres which vary with the configuration of the mechanism are called ---------- instantaneous centers.
5 The component of the acceleration parallel to the velocity of the particles at the given instant is called ---------- acceleration.
6 Due to slip of the belt, the velocity ration of the belt drive ----------
7 The module is the reciprocal of ---------- pitch
8 A differential gear in an automobile is a ----------
9 A swaying couple is due to the ----------
10 ---------- gears are used for transmitting power between shafts which are perpendicular.

II **Write short notes on any FIVE** **(5x2=10)**

1 What is the function of a governor and list its types?
2 What are different type of chains and narrate their usage?
3 Differentiate between machine and mechanism with suitable examples.
4 Write short note on static and dynamic balancing.
5 What do you mean by slip and creep in a belt drive?
6 List the different types of bearings and their application.
7 What do you mean by gear train and mention the different types of gear trains?

III **Answer any FIVE** **(5x4=20)**

1 Obtain an expression for the length of a belt in open belt drive.
2 What are the different type of clutches and explain the basic principle of clutches.
3 Write the procedure of determination of velocity and acceleration by vector polygon method.
4 Explain the various terms and terminologies used in gears with a diagram.
5 Explain the working principle of Watt Governor.
6 Explain the balancing of rotating masses in a single plane.
7 Explain the classification of pairs.

IV **Write essay on any ONE** **(1x10=10)**

1 a. Explain the functioning of a multiple disc clutch.
b. Explain the partial balancing of reciprocating masses.
2 Explain the slider crank chain and their inversions.

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