

Cat. No: Fpme 2106**Marks: 50****Title: Theory of Machines(2+1)****Time : 2 hours****I. Fill up the blanks:****(10 x 1=10)**

1. The total number of instantaneous centre for a mechanism consisting of n links are -----
2. The component of the acceleration parallel to the velocity of the particle at the given instant is called ----- acceleration.
3. The module is the reciprocal of ----- pitch.
4. The cam follower generally used in automobile engineer is -----
5. A swaying couple is due to the -----
6. According to Aronolds kennedy's theorem, if three bodies move relatively to each other, their instantaneous centres will lie in a -----
7. The angle of inclination of the plane, at which the body begin to move down the plane, is called -----
8. The velocity ratio of two pulleys connected by an open belt or crossed belt is ----- proportional to their distances.
9. A governor is said to be hunting, if the speed of the engine-----
10. The brakes commonly used in railway trains is-----

II. Write short note on ANY FIVE:**(5x 2=10)**

1. Write short notes on static and dynamic balancing.
2. What do you mean by slip in a belt drive and explain its importance.
3. List the different types of bearings and their application.
4. Define clutch and give the characteristics of a single plate clutch.
5. Write short notes on Watt governor.
6. What do you mean by gear train and mention the different types of gear trains.
7. State Kennedy's theorem.

III Write answers on ANY SIX:**(5 x 4=20)**

1. Explain with sketches the different types of cams.
2. Explain with sketches the different types of cam followers.
3. Obtain an expression for the length of a belt in open belt drive.
4. Explain the working principle of internal shoe brake.
5. Write the procedure of determination of velocity and acceleration by vector polygon method.
6. Explain the various terms and terminologies used in gears with a diagram.
7. Define flywheel and derive expressions for fluctuations of speed and energy.

IV. Write essay on any ONE

(1 x 10=10)

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