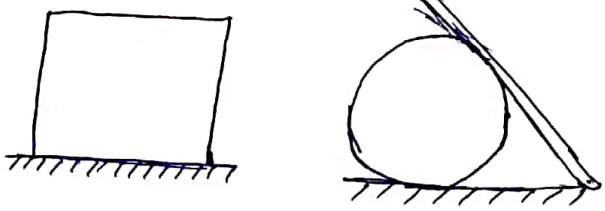
Two marks Question

- Define Resistantant body
- What is the function of flywheel?
- What is Link?
- What do you mean by reverted and epicyclic gear train
- What is a Bearing?
- What do you mean by Static Balancing?
- What do you mean by Free Vibration and Damped Vibration?
- Define mechanism
- Explain the phenomena of Slip and Creep in a belt drive
- What is the function governor?
- Define Vibration.
- Define Frequency.
- Difference between machine and mechanism.
- Define co-efficient of friction
- Write the formula for velocity ratio in Belt drive.
- Define clutch
- What is reverted gear train
- What is the function of cam and follower
- Define time period and amplitude with respect to Vibration
- Define kinematic link. Mention its types.
- What is angle of Repose?
- What is difference between a brake and dynamometer.
- What is crowing of pulleys?
- Write down the classification of governor.
- What is the necessity of balancing of rotating mass?

5 marks Question

- What is Turning pair, Sliding pair, and Screw Pair. Give an example of each.
- Find out the DOF of the following bar shown below:



- Derive the expression for condition of Maximum power Transmission in a belt drive
- Mass of a flywheel of an engine is 6.5 tonne and radius of gyration is 1.8 m. It was found from turning moment diagram that the fluctuation of energy is 56 KNm. If speed of engine is 120 rpm. Find maximum and minimum speeds.
- Derive the expression for torque transmission in flat collar bearing by assuming Uniform Pressure Theory.
- How the Static balancing of a Single rotating mass is done by a Single rotating mass?
- Classify the followers and explain briefly
- Explain different kinds of Kinematic pairs giving examples for each of one of them.
- Describe with a neat sketch the working of a single plate friction Clutch
- Describe the condition for transmitting the maximum power in a flat belt drive.
- Difference between flywheel and governor.
- Explain the causes and effects of unbalance.

10 marks Marks Questions

- Sketch and explain the inversions of four bar mechanism
- A casting weighing 9 KN hangs freely from a rope which make 2.5 turns round a drum of 300mm diameter revolving at 20 rpm The other end of rope pulley by a man $\mu = 0.25$. Determine
  (i) The force of required by man.
  (ii) Power to raise the casting.
- In a epicyclic gear train, and arm carries two gears A and B having 36 and 45 teeth respectively. If the arm rotates of 150 rp In the anticlockwise direction about the centre of gear A which is fixed. Determine the speed of gear B, if gear A is fixed and Speed of gear B, When gear A rotates of 300 rpm in Clockwise direction?
- A porter Governor has equal arms of 250 mm long and pivoted to axis of rotation. Each ball has a mass of 5 Kg and mass of 5 Kg and mass of sleeve load is 15 Kg. The radius of rotation of the ball is 150mm which begins to lift and 200mm when the governor is at maximum speed. Find minimum and maximum speeds?
- A Single plate Clutch with both sides effective is used to run a machine through a shaft rotating at 250 rpm. Inner and Outer diameter of the lining are 120mm and 240mm. Maximum pressure should not exceed 120KN/m². ($\mu = 0.25$)
  Find out (i) Torque transmitted through clutch.
  (ii) Time to attain full speed if moment of inertia is 7 Kg m²
- How to determine the natural frequency of Free Longitudinal Vibration?

- A shaft of length 0.75m, supported freely at the ends. carrying a load of 90 kg at 0.05 m from one end. Find the natural frequency of transverse vibration. Assume E = 200 GN/m² and d = 50 mm?
- What is four bar chain? Explain any two inversion of four bar chain.
- What is the function of Dynamometer and explain Prony Brake Dynamometer with figure?
- A belt is running over a pulley of diameter 120 cm at 200 rpm. The angle of contact is 165° and co-efficient of friction between the belt and pulley is 0.3. If the maximum tensions in the belt is 3000 N. Find the power transmitted by the belt.
- Derive the expression for frictional torque in pivot bearing Considering uniform pressure.
- With a neat sketch explain the working of watt-governor
- With a neat sketch explain torsional vibration and longitudinal vibration.
- A body of weigth 70N is placed on a rough horizontal plane 70N is placed on a rough horizontal plane. To just move the body on the horizontal plane, a push of 20N inclined at 20° to the horizontal plane is required. Find the co-efficient of friction.
- Sketch and describe the four bar chain mechanism Explain its inversion.
- The length of the upper arm of a Watt governor is 500 mm and its inclination to the ~~Hor~~ Vertical is 45°. Find the percentage increase in Speed, if the ball rise by 30mm.