

FAQ OF THEORY OF MACHINE

(3341903)

CH-1 INTRODUCTION

1	Difference between Kinematics, Kinetics.	WINTER-2014
2	Draw neat sketch of double slider crank mechanism label its' links, joints, clearly.	WINTER-2014
3	Define inversion of Mechanism. Name the inversion of single slider crank Mechanism and explain any one with neat sketch.	WINTER - 13 DEC 2010
4	Differentiate between (1) Lower pair & Higher pair (2) Machine & Mechanism.	WINTER - 13
5	What is kinematic pair? Classify various types of kinematic pairs? Explain them with neat sketches.	SUMMER - 13
6	Draw two Inversion of single slider Crank chain & explain it.	SUMMER - 13
7	Define (a) kinematics (b) dynamics (c) statics (d) Kinetics.	WINTER-2012
8	Define mechanism and give the difference between machine and mechanism.	WINTER-2012

CH.-2 VELOCITY AND ACCELERATION

1	Explain with neat sketch Klein's construction for velocity and acceleration of the parts of Reciprocating engine.	JUNE - 2011
2	In four bar chain ABCD, link AD is fixed and the crank AB rotates at ω radians/sec clockwise. Length of link AB=60mm,BC=CD=70mm,DA=120mm ,when angle DAB=60 and both B & C link on the same side of AD find (i) angular velocities of BC and CD (ii) angular acceleration of BC and CD.	JUNE - 2011

CH.-3 CAM AND CAM PROFILE

1	Draw a cam profile to raise a knife edge follower with simple harmonic motion through 30 mm in 1200 of a revolution, keep it fully raised through 300 revolution and to lower it with uniform velocity in 600 revolution. The axis of follower passes through the axis of cam shaft which rotates anticlockwise with 100 rpm. The base circle diameter is 50 mm.	WINTER - 13
2	What is cam & follower? State types of cam & follower and explain with sketch Roller & Flat face follower.	SUMMER - 13
3	List types of cams and followers and explain valve Mechanism of IC engine.	WINTER 12, JUNE 12
4	List types of follower's motion and explain any one.	WINTER 12

CH.-4 FRICTION

1	Classify clutches. Describe working of single plate clutch with neat sketch.	WINTER 14, 13
2	Classify brakes. Describe working of band and block brake with neat sketch.	WINTER 14, 13
3	Classify dynamo meters. Describe working of rope brake dynamo meter with neat sketch.	WINTER 14
4	Derive an expression of friction torque for flat pivot bearing assuming Uniform wear.	WINTER 13
5	Differentiate between brake & Dynamo meter.	SUMMER - 13

CH.-5 POWER TRANSMISSION

1	Describe with diagrams (1) Open belt drive (2) Crossed belt drive (3) Compound belt drive.	DECEMBER 2010
2	What is slip in the belt drive? Explain the effect of slip on velocity ratio and power transmission by belt.	WINTER - 13 DEC 2010
3	State the types of belt and compare the flat and V-belt. Why V-belt more prefer in power transmission than flat belt.	DEC 2010 JUNE 2012
4	Derive the equations $T_1/T_2 = e^{\mu\theta}$ for belt drive with usual notation.	01/06/11
5	Determine the power transmitted by flat belt running over a Driving pulley of 500 mm diameter at 360 rpm. Diameter of driven pulley is 1000 mm and center dist. between two pulley is 4000 mm. Mass of the belt is 1.25 Kg/m. Co efficient of friction between the belt and pulley is 0.12 and maximum tension in the belt is 1800N.	WINTER 2014
6	Explain epicyclic gear train.	WINTER 12, JUNE 12

CH.-6 FLYWHEEL AND GOVERNOR

1	List types of governors. Describe construction and working of any one with neat sketch.	WINTER 2014
2	Differentiate between Flywheel and Governor.	WINTER, SUMMER 13, JUNE 12, 11
3	Explain turning moment diagram of four stroke cycle IC engine and press machine.	WINTER 2012

4	Explain with neat sketch the working of Hartnell Governor.	JUNE 2012 DEC 2011
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CH.-7 BALANCING AND VIBRATION

1	State the causes of vibration and method of its removal.	JUNE - 2011 WINTER - 2014 WINTER - 2013
2	Define in short free vibration, force vibration and damped vibration.	01/12/11
3	Explain the balancing of several masses, revolving in the same plane by analytical method with neat sketch.	WINTER 14, 13