

SCHOOL OF DIPLOMA ENGINEERING, SOLDHA
QUESTIONS FOR REVISION
DIPLOMA ME 5TH SEM
SUBJECT-THEORY OF MACHINES

VERY SHORT QUESTION (2 MARKS)

1. Define MACHINE.
2. Define resistant body
3. Define constrained motion.
4. What is higher pair?
5. Classify types of belts.
6. Define creep.
7. Define crowning of pulley.
8. Define diametral pitch
9. Define pressure angle.
10. Name the rope material define coefficient of fluctuation of energy.
11. What is flywheel
12. What is governor?
13. Define isochronisms.
14. Define dynamic balancing.
15. What is balancing?
16. Define longitudinal vibrations.
17. Name the term used of number of cycle completed in one sec.
18. What is resonance
19. Give the equation of length of open belt
20. Define PCD in gear.
21. List types of pulley.

SHORT QUESTION FOR (4) MARKS

1. Diff b/w structure and machine.
2. Describe elliptical trammel.
3. Classify of kinematic pairs.
4. Explain slip in belt.
5. Explain compound gear train.
6. Advantages of v belt over flat belt
7. Give application of flywheel
8. Explain different types of flywheel.
9. Give function of governor.
10. Explain hunting.
11. How does flywheel differ from governor?
12. What is need of balancing?
13. What are harmful effects of vibration?
14. What is cause of vibrations?

LONG QUESTION FOR 10 MARKS

1. Four masses m_1, m_2, m_3 & m_4 are 200 kg ,300 kg ,240 kg & 260 kg respectively. The corresponding radii of rotation are 200 mm , 150 mm ,250 mm ,& 300 mm respectively and the angles between successive masses are 45 degree ,75 degree & 135 degree .Find the position and magnitude of the balance mass required by graphical method , if its radius of rotation is 200 mm.
2. Explain the different types of free vibrations with sketches
3. Explain with a neat sketch, the working of Centrifugal governor.

4. (A) List the classification of toothed wheels.

b) Explain with a neat sketch, the compound gear train.

5. a) List the types of belt drives .

b) Explain what you understand by “Initial Tension in a belt”.

6. a) Explain with a neat sketch ,Scotch yoke mechanism .

b) Explain single slider crank chain mechanism.

7. a shaft supported freely at the ends has a mass of 120 kg placed 250 mm from one end. Length is 700mm. $E=200\text{GN/m}^2$, $d=40\text{ mm}$, find natural frequency.

8. In a porter governor the mass of each ball is 2kg and the central load on the sleeve is 20 kg, the links are equal in length and 250 mm long. At what speed must governor rotates so that balls revolve in a circle of 200mm radius.

9. The mass of flywheel is 6500 kg and the radius of gyration is 180cm. it is found from the turning moment diagram that the fluctuation of energy is 56kJ. If the mean speed of the engine is 120 rpm find the max. and min speed.