Q.30 Explain the types of vibration.
Q.31 Write the method of balancing a single rotating mass by another mass in same plane.
Q.32 Write the harmful effects and remedies of vibrations.
Q.33 Explain pantograph with diagram.
Q.34 Draw the classification diagram of kinematics pairs
Q.35 Two mating gears have 50 and 40 teeth. The common module is 5mm. Find the centre distance between the two.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the application of various inversions of fourbar mechanism with their diagrams.
Q.37 Derive and expression of length of crossed belt drive.
Q.38 Describe briefly the turning moment diagrams and energy variation.

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Mecatronics
Subject:- Mechanism and machines

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Which of the following is not a type of link?
a) Rigid link b) Fluid link
c) Flexible link d) Bar link

Q.2 The distance between hinge centre of two adjacent links are called as_____
a) Pitch b) Pitch circle diameter
c) Pitch circle d) None of the above

Q.3 The SI unit of mass moment of inertia is_____
a) Kg/m2 b) Kgm2
c) m/s2 d) ms2

Q.4 The profile of the cam on which the follower neither oscillitate nor reciprocate is called_____
a) Lift b) Cam profile
c) Trace d) Dwell

Q.5 It is easiest to balance which of the following elements?
a) Reciprocating b) Hanging
c) Rotating d) Sliding

Q.6 Longitudinal vibrations are those whose particles of body moves_____
a) Parallel to the axis
b) Perpendicular to the axis
c) About the axis
d) None of the above

Q.7 The ratio of maximum fluctuation of energy to work done per cycle is called
a) Co-eff of fluctuation of speed
b) Co-eff of fluctuation of energy
c) Co-eff of speed
d) None of the above

Q.8 The type of motion in cam depends upon
a) Shape of cam b) Type of follower
c) Both a and b d) None of the above

Q.9 A cam transmits irregular or intermittent motion by
a) Rolling contact b) Sliding contact
c) Both a and b d) None of the above

Q.10 Which of the following is not a follower motion
a) Uniform velocity
b) Simple harmonic motion
c) Parabolic motion
d) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define balancing

Q.12 Oldham coupling is an inversion of_____

Q.13 _____drive is used to transfer a large amount of power over a considerable distance

Q.14 Draw turning moment diagram of single cylinder single acting steam engine

Q.15 For dynamic balance _____balance of force should be ?

Q.16 Analytical and _____are the two methods of finding resultant force.

Q.17 Define reference plane

Q.18 _____is a structure which supports the moving part of a machine.

Q.19 Gnome engine is an inversion of_____

Q.20 Chains are made of _____links hinged together.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 What is constrained motion? Explain its types

Q.22 Draw Oldhams coupling and explain its working.

Q.23 Write the advantages of V belt over flat belt

Q.24 What is centrifugal tension? Drive an expression.

Q.25 What is difference between co-eff of fluction of speed and co-eff of fluctuation of energy?

Q.26 A flywheel gives upto 20.20 kj of energy in changing its speed from 104 rpm to 100 rpm. Calculate its kinetic energy at 150 pm.

Q.27 Classify followers according to surface in contact

Q.28 Draw various types of cam.

Q.29 What is statis balancing . Explain