

- Q.17 Define the concept of slip and creep in belt drives.
- Q.18 Explain the working of Watt governor.
- Q.19 Explain the differences between simple and compound gear trains.
- Q.20 Explain different types of vibrations.
- Q.21 Explain the different types of chains.
- Q.22 Define the cam. What are its different types?

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

- Q.23 Drive an expression condition for transmission of maximum power by belt.
- Q.24 Discuss the method of balancing of different masses in different planes.
- Q.25 Define the following terms of governor:
- Sensitiveness
  - Stability
  - Isochronism

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**5th Sem / Mechanical Engg.**

**Subject : Theory of Machines**

Time : 3 Hrs.

M.M. : 60

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 Which type of constrained motion is exhibited by a cam and follower?
- Completely constrained
  - Incompletely constrained
  - Successfully constrained
  - Partially constrained
- Q.2 Which mechanism is used in shaping machines?
- Oldham's coupling
  - Crank and slotted Lever mechanism
  - Scotch Yoke Mechanism
  - Geneva Mechanism

Q.3 The purpose of a flywheel in an IC engine is to:

- a) store and release energy
- b) increase engine speed
- c) control air -fuel ratio
- d) reduce fuel consumption

Q.4 What is the primary function of a governor?

- a) to maintain a constant speed
- b) to store energy
- c) to cool down the system
- d) to lubricate gears

Q.5 Which of the following is not a type of mechanical vibration?

- a) free vibration          b) forced vibration
- c) rotational vibration   d) damped vibration

Q.6 Which gear train is used in clocks?

- a) simple gear train      b) epicyclic gear train
- c) compound gear train   d) reverted gear train

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## SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define epicyclic gear train.

Q.8 Chain drives are generally more efficient than belt drives. (True/False)

Q.9 Name two types of governors used in mechanical systems.

Q.10 \_\_\_\_\_ belt drive is used when the driver and driven shafts are parallel and rotating in the same direction.

Q.11 What is the purpose of balancing rotating masses?

Q.12 Resonance in a machine always improves performance. (True/False)

## SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain different types of constrained motion.

Q.14 Explain the working of a Scotch Yoke Mechanism.

Q.15 What are the advantages of gear drive over belt drive?

Q.16 Discuss the applications of flywheels in mechanical systems.

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