(8) Equation for formative number of teeth in helical gears:

A) $TE = T / \cos^3 \alpha$.

9. Short note on design of springs.

A) it is elastic machine component able to deflect under load in a prescribed manner and to recover its initial shape when unloads.

10. Different types of springs.

A) 1. leaf spring.
2. torsion spring.
3. coil spring.
4. gas spring.
5. Helical spring.
6. cone spring.

7. Discuss design procedure for Spur gears.

A: 1. calculation of gear ratio.

2. Selection of material.

3. calculation of initial design torque.

4. calculation of f_{eq}.

5. calculation of if centre distance.

8. Derive equation for formative number of teeth in helical gears.

A: $TE = T / \cos^3 \alpha$.

9. Short note on design of springs.

A: The design of helical - coil springs involves. Selection of a material of a material, and determination of the wire diameter,

The right spring will provide long-lasting operations.

10. Repeated in paper = 1

Paper = 2 Short Answer.

1. Define Basic dynamic load rating in rolling contact bearings.

A1- The load which is bearing can theoretically endure for a basic rating life of one million revolutions.

2 Some guide lines for selecting proper types of bearings.

1. installation space
2. load
3. Rotational speed.
4. Running accuracy.
5. Rigidity.
6. misalignment.

3. methods and materials used in manufacture of workshaft.

A1 materials! - Ductile iron, forged steel, titanium.

methods! = casting, forging, billet machined.

Paper = 3 Short answers.

10. Any four desirable properties of a good bearings materials.

Ans properties:- 1. compatibility.
2. compressive strength.
3. fatigue strength.
4. Thermal conductivity.
5. cost.

2. Why are tapper roller bearings used in pairs.

Ans Because that axial forces can be supported equally in either directions.

3. Repeated.

4. Repeated.

5. Repeated.

6. Repeated.

7. Repeated.

8. Repeated

9. Repeated.

4. State the function of the ribs for an IC engine piston.

A) Function:- Ribs strengthen the piston head against the gas pressure.

→ They increase the rigidity and prevent the distortion of the piston head.

5. uses of construction of wire ropes. How is wire rope ends fastened?

A) → The uses for wire rope include adding support to suspension bridges. lifting. Elevators. and serving as additional reinforcement for towers.

→ The wire rope ends fastened. a swaged socket is applied to the end of a wire rope cable and is then forced into place. using special dies.

6. The relation for the ratio of driving tensions. of a V-belt.

A)

$$\text{Ratio of tension in V-belt} = \frac{T_1}{T_2} = e^{\mu\theta}$$