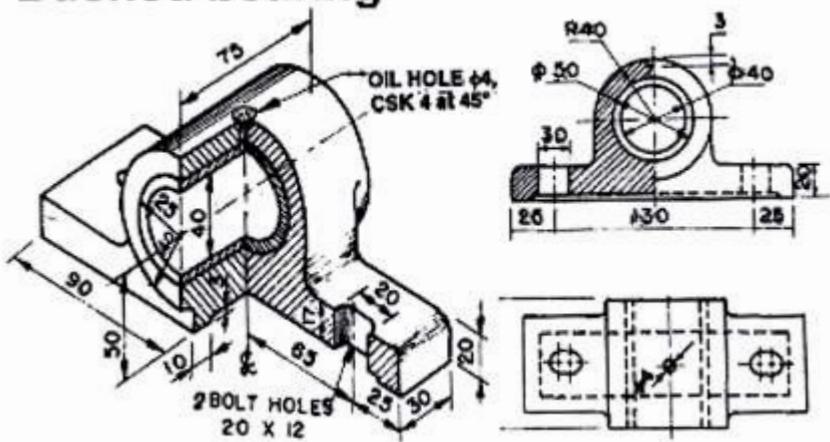


- Q.16 Draw the profile of involute teeth for a gear having 20 teeth and D.P. is equal to 4 cm as unit length. Assume pressure angle 20°. (CO4)
- Q.17 Draw front and side view of four stroke petrol engine piston by assuming appropriate dimensions? (CO3)
- Q.18 Figure shows bush bearing; draw its front view , top view and side view (CO3)

### Bushed bearing



Note that the insertion of the shaft in this bearing is endwise

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### 3rd Sem / Automobile Engineering Subject:- Automobile Engineering Drawing

Time : 3Hrs.

M.M. : 100

**Note : Assume dimensions wherever necessary.**

### SECTION-A

**Note:** Attempt any eight questions, each carry 2 marks. (CO1)

- Q.1 What is 'IT' in systems of fits?
- The basic size of hole
  - The basic size of shaft
  - Tolerance grade
  - Standard tolerance factor
- Q.2 Oldham coupling is used to connect two shafts having intersecting axes.
- True
  - False
- Q.3 The size of a cam depends upon
- base circle
  - pitch circle
  - prime circle
  - pitch curve
- Q.4 The angle between the direction of the follower motion and a normal to the pitch curve is called
- Pitch angle
  - Prime angle
  - base angle
  - Pressure angle

Q.5 The cam follower generally used in automobile engines is

- a) Knife edge follower
- b) flat faced follower
- c) spherical faced follower
- d) Roller follower

Q.6 Offset is provided to a cam follower mechanism to

- a) Minimize the side thrust
- b) accelerate
- c) Avoid jerk
- d) none of the mentioned

Q.7 Which types of joints are used when the shafts are inclined?

- a) Universal joint      b) Hinge joint
- c) Ball and socket joint d) Pivot joint

Q.8 Which of the following can be used for power transmission in intersecting shafts.

- a) Spur Gear      b) Helical Gear
- c) Bevel Gear      d) None of the listed

Q.9 Which of the following is not true about gears?

- a) Positive drive
- b) Constant velocity ratio
- c) Transmit large power
- d) Bulky construction

Q.10 Herring bone gear can be used in

- a) Intersecting shafts only
- b) Parallel shafts only

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- c) Both intersection and parallel shafts
- d) None of the mentioned

## SECTION-B

Note: Draw free hand sketched of any three

(3x8=24)

(CO2)

Q.11 Overhead valve mechanism.

Q.12 Battery ignition system.

Q.13 Leaf spring suspension.

Q.14 Wheel cylinder.

## SECTION-C

Note: Attempt any two questions.

(2x30)

Q.15 Draw the profile of the cam to give following motion to the knife edge follower having center in line with cam with stroke height of 65 mm.

- a) Follower to move outward/rise during  $120^\circ$  of cam rotation.
- b) Follower to dwell for  $60^\circ$  of cam rotation.
- c) Follower to return its original position  $120^\circ$  of cam rotation.
- d) Follower to dwell for the remaining rotation of the cam.

(CO4)

The minimum radius of cam is 40 mm the outward and inward strokes of the follower are to take place with simple harmonic motion.

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