

**3rd Sem / Auto**  
**Subject:- Automobile Engineering Drawing**

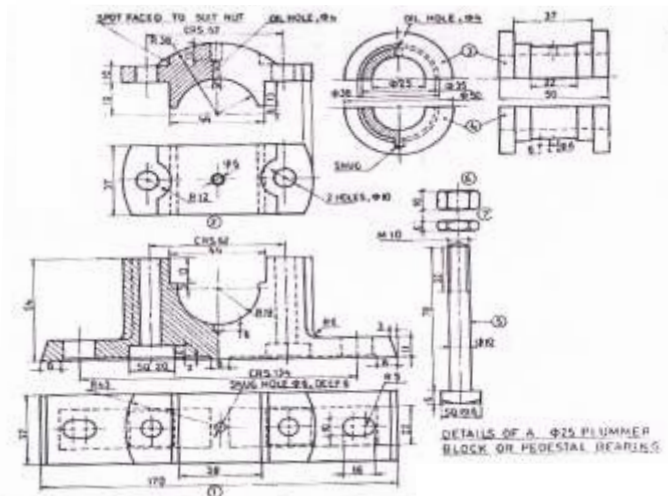
Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. Attempt any eight questions. (8x2=16)

- Q.1 The difference between the maximum material limits of the mating parts is called \_\_\_\_\_
- a) Deviation                      b) Allowance  
c) Tolerance                      d) Actual deviation
- Q.2 Minimum clearance is the difference between \_\_\_\_\_ size of the hole and the \_\_\_\_\_ size of the shaft.
- a) minimum, maximum  
b) minimum, minimum  
c) maximum, maximum  
d) maximum, minimum
- Q.3 If the allowance is negative, which of the following is true between the mating parts?
- a) Minimum clearance  
b) Maximum clearance  
c) Minimum interference  
d) Maximum interference



- Q.17 Draw the profile of involute teeth by Prof. Unwin's method having 24 teeth, module pitch 10 mm and pressure angle  $25^\circ$ . Draw at least four teeth.
- Q.18 A cam, with a minimum radius of 40 mm, rotating clockwise at a uniform speed is required to give a knife edge follower, the motions as described below:
- To move outward through 50mm during  $100^\circ$  rotation of the cam
  - To dwell for the next  $80^\circ$ .
  - To return to its starting position during next  $90^\circ$ .
  - To dwell for the rest period of a revolution i.e.  $90^\circ$ .

Draw the profile of the cam. The displacement of the follower is to take place with uniform acceleration and deceleration.

- Q.4 Deep groove ball bearings creates a lot of noise.  
 a) Yes  
 b) They create very less noise  
 c) Depends on the application  
 d) No reference frame for comparison is mentioned
- Q.5 Which of the following cannot take radial load?  
 a) Cylindrical Roller bearing  
 b) Taper roller bearing  
 c) Thrust ball bearing  
 d) None of the listed
- Q.6 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.7 Which of the following does not relate to spark ignition engine?  
 a) Spark plug              b) Carburetor  
 c) Fuel injector            d) Ignition coil
- Q.8 Which of the following is the need of the gearbox?  
 a) To vary the speed of the vehicle  
 b) To vary the torque of the vehicle  
 c) To vary the power of the vehicle  
 d) To vary the acceleration of the vehicle

- Q.9 The angle between the direction of the follower motion and a normal to the pitch curve is called  
 a) pitch angle              b) prime angle  
 c) base angle              d) pressure angle
- Q.10 Which of the following firing order is commonly used for the four-cylinder vertical engine?  
 a) 1-2-3-4                  b) 3-4-1-2  
 c) 4-3-2-1                  d) 1-3-4-2

### SECTION-B

**Note:** Draw free hand sketches of any three (3x8=24)

- Q.11 Side valve mechanism  
 Q.12 Master Cylinder  
 Q.13 Universal joint (Front view & side view)  
 Q.14 Single plate clutch

### SECTION-C

**Note:** Attempt any two questions. (2x30=60)

- Q.15 Draw front and side view of four stroke petrol engine piston by assuming appropriate dimensions.
- Q.16 Details of Plummer block is shown in Fig. below  
 Assemble all these parts and draw following view:-  
 i) Front elevation right half in section  
 ii) Side view left half in section  
 iii) Top view