32 Edr (T)26/25

2025

ENGINEERING DRAWING

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

Instructions :

(i) Attempt all the questions.

(ii) All dimensions are in millimetres.

(iii) Missing and mismatching dimensions, if any may be suitably assumed.

(iv) Use both sides of the drawing sheet if necessary.

(v) Follow the SP : 46 – 2003 revised codes, (With first angle method of projection) if not mentioned.

(vi) In question 11, hidden edges or lines are to be shown in views without section.

Answer the following Multiple Choice Questions. Rewrite the correct answer on your drawing sheet. 1×5=5

1. An inclined edge of an object in isometric projection is obtained by :

(A) using angle of inclination

(B) co-ordinate method

(C) drawing a line at 90° to the horizontal

(D) drawing a line at 30° to the vertical

2. In isometric projection, the three principal axes are inclined at what angles with the horizontal base line?

(A) 30°,90°,30° (B) 30°,90°,60°

(C) 30°,120°,30° (D) 60°,90°,60°

3. What is the name of the circular plate having a hole in the centre, that provides a flat smooth bearing surface for a nut?

(A) rivet (B) washer

(C) nut (D) bolt

4. A cotter joint is used to connect two :

(A) parallel rods (B) perpendicular rods

(C) co-axial rods (D) rods in any position

5. For joining guy ropes and wires of electric poles, which of the following is an adjustable temporary joint?

(A) turnbuckle (B) flange pipe joint

(C) knuckle joint (D) strap joint

Answer the following questions :

6. Construct an isometric scale. 3

7. Construct the isometric projection of a regular pentagonal pyramid base edge 40 mm and height 90 mm is kept in the inverted position. One of its base edge is parallel to V.P. and away from that. Give all dimensions, show axis and direction of viewing. 7

OR

Construct the isometric projection of a frustum of an equilateral triangular pyramid, kept in the inverted position, base edge = 30 mm, top edge = 60 mm and

height = 50 mm with its triangular ends of 30 mm side, resting on H.P. One of its base edges and one of its top edges are parallel to H.P. and V.P. and are away from V.P. Draw the axis and indicate the direction of viewing. Give all dimensions. 7

8. A regular hexagonal prism of base sides 25 mm and length 80 mm is lying on H.P. on one of its rectangular faces, with its hexagonal ends parallel to V.P. A cone of base diameter 40 mm and height 50 mm, with its axis vertical, rests centrally on the top rectangular face of the prism. Draw the isometric projection of the solids placed together. Give all dimensions. 13

OR

Draw an isometric projection of a right circular cone resting vertically and centrally on the top of pentagonal slab having one of its rectangular face perpendicular to the observer. Side of pentagon = 46 mm, thickness of slab = 30 mm, diameter of cone = 40 mm and height of cone = 60 mm.Give all dimensions. 13

9. Draw to scale 1 : 1, the front view and top view of Hook Bolt of size M 20, keeping their axis vertical. 8

OR

Draw to scale 1:1, the standard profile of a metric thread (internal), taking pitch as 50 mm. Give standard dimensions. 8

10. Sketch freehand, the front view and top view of a grub screw of size M20, keeping its axis vertical. Give all dimensions. 6

OR

Sketch freehand, the front view and top view of a flat head rivet of diameter 20 mm, keeping its axis vertical. Give all dimensions. 6

11. Figure1, shows the orthographic views of the details of an 'Open Bearing'.Assemble these parts correctly and then draw to scale 1:1 the following views :

A. Front view left half in section, looking in the direction of arrow A

B. Top View

C. Left hand Side View

Write heading and scale used. Draw the projection symbol. Give all dimensions. 28

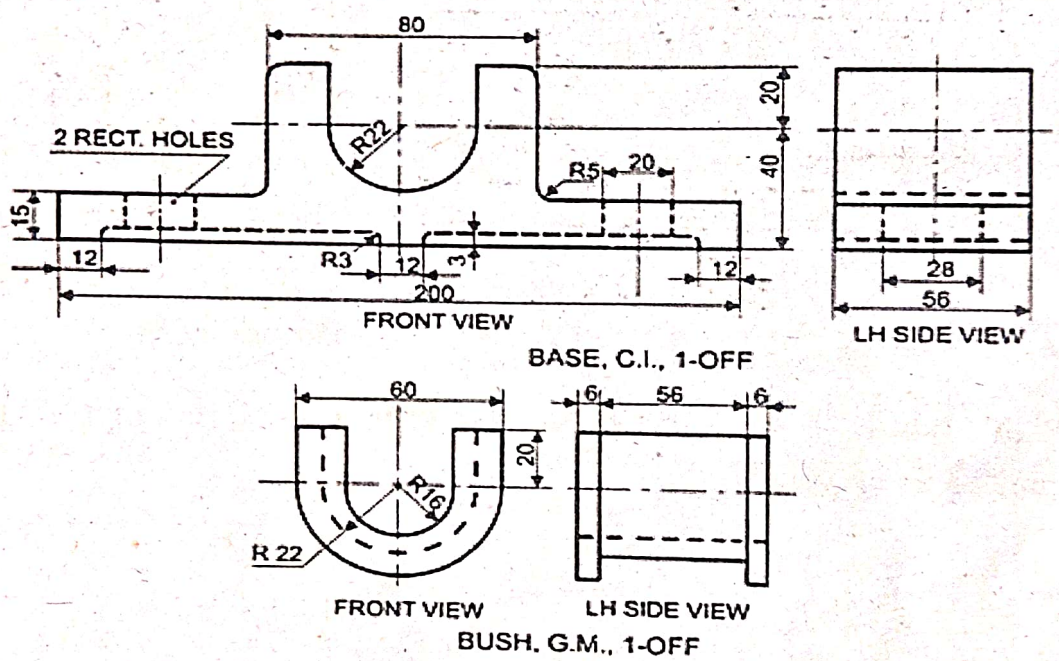

Fig. 1 OPEN BEARING (DETAILS)

OR

Figure 2, shows the assembly of a turnbuckle. Disassemble its parts correctly and then draw the following to scale full size, keeping its parts in the same position with respect to H.P. and V.P.

A. Turnbuckle: Front view full in section, top view and side view as seen from left.

B. Rod B: Front view and left hand side view

Write titles and scale used. Draw projection symbol. Give all dimensions. 28

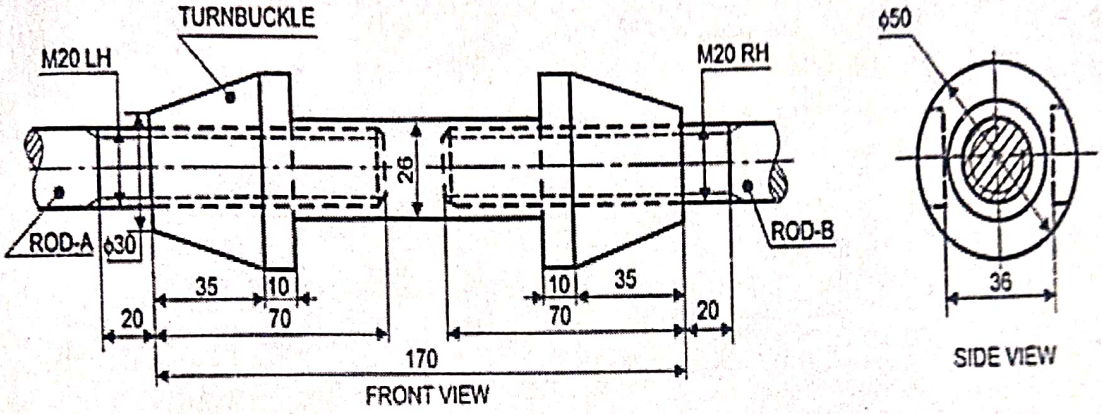

Fig. 2 ASSEMBLY OF TURNBUCKLE