

2016

ENGINEERING DRAWING

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three Hours and *Fifteen Minutes

(*Fifteen minutes are given as extra time for reading questions)

INSTRUCTIONS:-

- i) Attempt **all** the questions.
- ii) All dimensions are in millimeters.
- 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: 46-1988 Codes, (With first angle method of projection) if not mentioned.

1. (a) Construct an isometric scale. 4
- (b) Draw the frustum of a pentagonal pyramid of base edges = 30mm and top edges = 20mm. The height of the pyramid is 70mm with its axis perpendicular to H.P. and parallel to V.P., one base side being parallel to V.P. and nearer the observer. 7

- (c) A hemi-sphere of diameter 90mm, is having its flat circular face, parallel to H.P. on the upper side. A cube of side 40mm, with two of its vertical faces perpendicular to V.P., is centrally placed on the top circular face of hemi-sphere, with its square base resting on it and their common axis is perpendicular to H.P. and parallel to V.P. Draw the isometric projection of the two solids placed together, using isometric scale. Indicate direction of viewing. Give all dimensions. 14

2. (a) Draw to scale 1 : 1, the Front view and Top view of a square out of nominal diameter = 30mm, keeping its axis vertical when placed corner to corner. Give standard dimension. 9

OR

Draw to scale 1 : 1, the standard profile of a knuckle thread, taking enlarged pitch = 50mm. Give standard dimension. 9

- (b) Draw to scale 1 : 1 the Front view and Top view of a Grub screw of size M20, keeping its axis vertical. 6

OR

Draw to scale 1 : 1 the full sectional front view and top view of a single riveted lap joint, taking thickness of plates as 16mm. Give standard dimension. 6

3. The Fig. 1 shows the details of an "Open Bearing". Draw to scale 1 : 1, the following views of the assembly.

- (a) Front View, left half in section, looking in the direction of arrow A.

(b) Top-view

(c) Left hand side view.

White heading and scale used. Draw projection symbol. Give all dimensions. 30

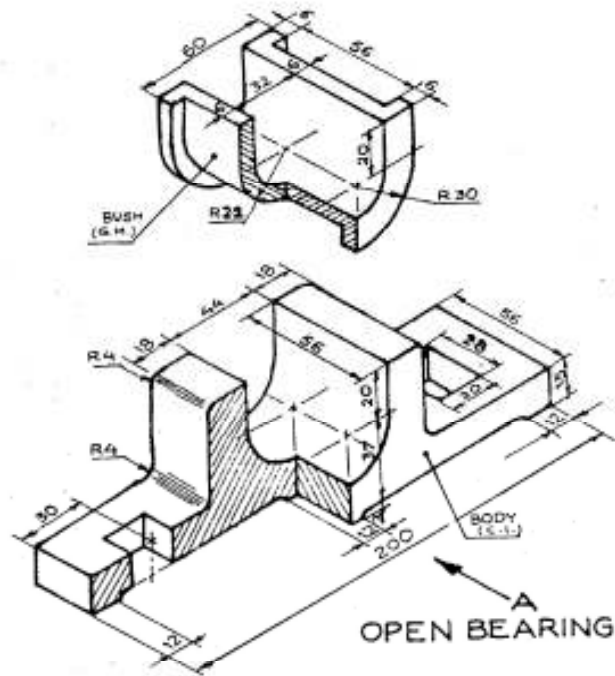


Fig. 1

OR

The Fig. 2 shows the details of the parts of a Turnbuckle. Assemble these parts correctly and then draw its following views to scale 1 : 1, inserting 70mm threaded portion of each rod inside the body.

(a) Front view, upper half in section.

(b) Side view as viewed from right.

(c) Top view.

Write heading and scale used. Draw the projection symbol. Give all dimensions. 30

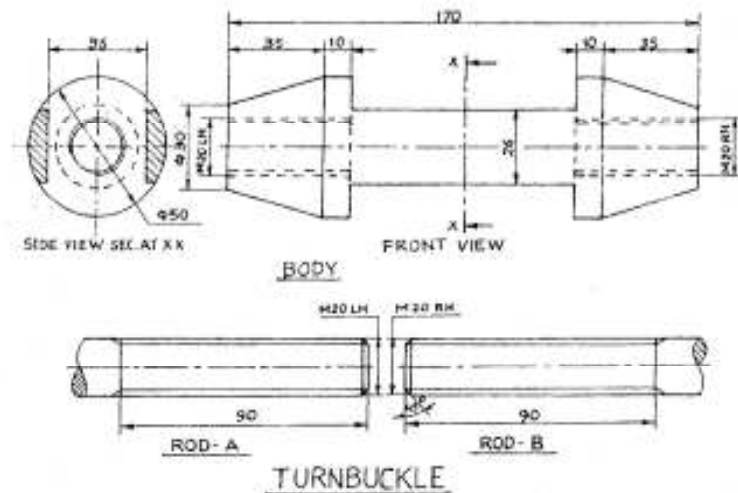


Fig. 2