

17305

11920

4 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Draw conventional representation for any SIX of the following : $2 \times 6 = 12$

- (a) Slotted head
- (b) Serrated Shaft
- (c) Bearing
- (d) Diamond knurling
- (e) Bevel gear
- (f) Counter bore
- (g) Petrol
- (h) Off-set section

[1 of 8]

P.T.O.

(B) Attempt any TWO of the following :

2 × 4 = 8

(a) Draw the symbol for the following :

- (i) Square butt weld
- (ii) Seam weld
- (iii) Single-bevel butt weld
- (iv) Fillet weld

(b) The shaft size is $50^{+0.280}_{+0.120}$ and the hole size is $50^{+0.090}_{+0.000}$. Determine :

- (i) Maximum allowance
- (ii) Minimum allowance

(c) State the meaning of the machining symbol as shown in Fig. 1.

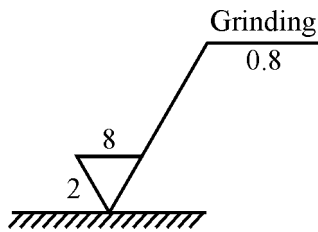


Fig. 1.

2. (A) Fig No. 2 shows front view, auxilliary top view and incomplete side view.

Complete the side view.

12

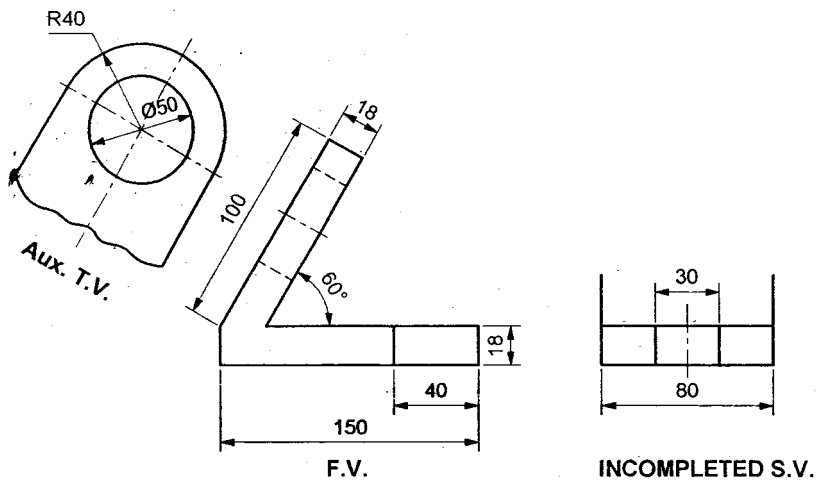
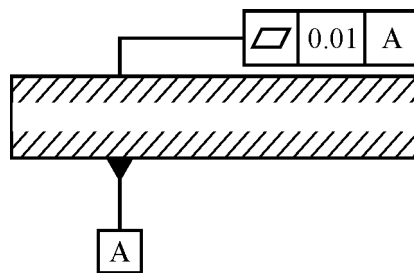


Fig. 2

(B) Attempt any TWO of the following :

- (a) Draw the symbols of the following features which are controlled in geometrical tolerance :
- Flatness
 - Symmetry
 - Cylindricity
 - Concentricity
- (b) Two mild steel plates of 8 mm thickness are to be welded to have a lap joint by a fillet weld of leg length 8 mm. Represent the weld on drawing with proper symbol.
- (c) Explain the meaning of every term, which is related with the Fig. 3.

**Fig. 3****3. Attempt any TWO of the following :****2 × 10 = 20**

- (a) A vertical square prism, base 60 mm side is completely penetrated by a horizontal square prism, base 40 mm side so that their axes are 8 mm apart. The axis of the horizontal prism is parallel to VP. While the faces of both prisms are equally inclined to VP. Draw the projection showing lines of intersection.
- (b) A vertical cylinder of 75 mm diameter is penetrated by another cylinder of 50 mm diameter, the axis of which is parallel to both the H.P. and the V.P. The two axes are 9 mm apart. Draw the projections of two cylinders showing curves of intersection. Assume suitable axis lengths for both cylinders.
- (c) A cone base diameter 70 mm and axis height 60 mm is kept on the H.P. on its base. It is penetrated by horizontal cylinder of 35 mm diameter the axis of which is parallel to V.P. and 20 mm above the base of the cone. Axis of the cylinder is 5 mm in front of the axis of the cone. Draw the projection of solids showing curves of intersection.

P.T.O.

4. Attempt any ONE of the following :

1 × 20 = 20

- (a) Fig. 4 shows the details of universal coupling. Draw the following views of assembly :
- (i) Sectional front view
 - (ii) Top view
 - (iii) Prepare bill of material
 - (iv) Indicate types of fit.

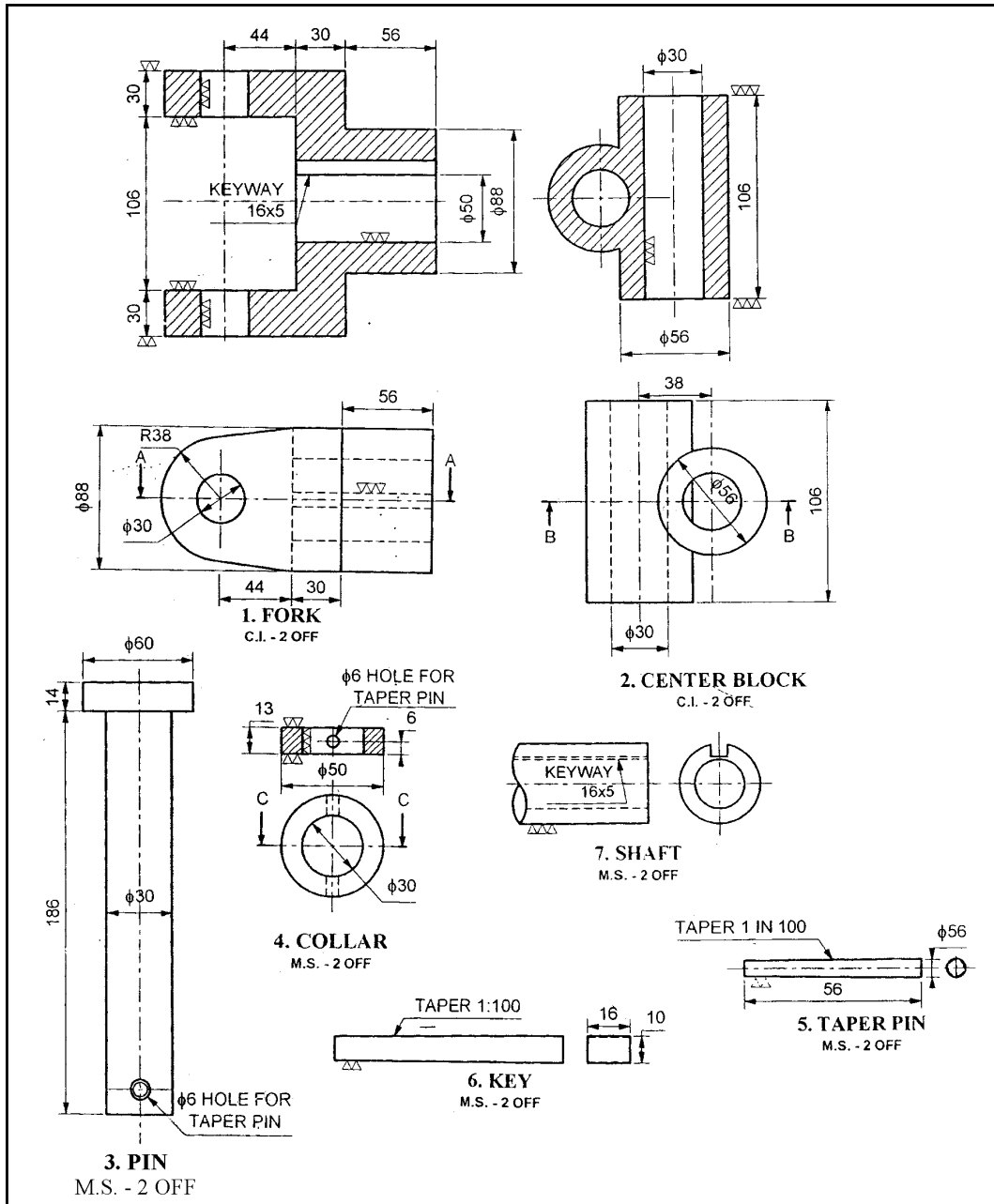


Fig. 4

(b) Fig. 5 shows the details of foot step bearing. Draw the following views of the assembly :

- (i) Front elevation right half in section
- (ii) Top view
- (iii) Prepare bill of material.

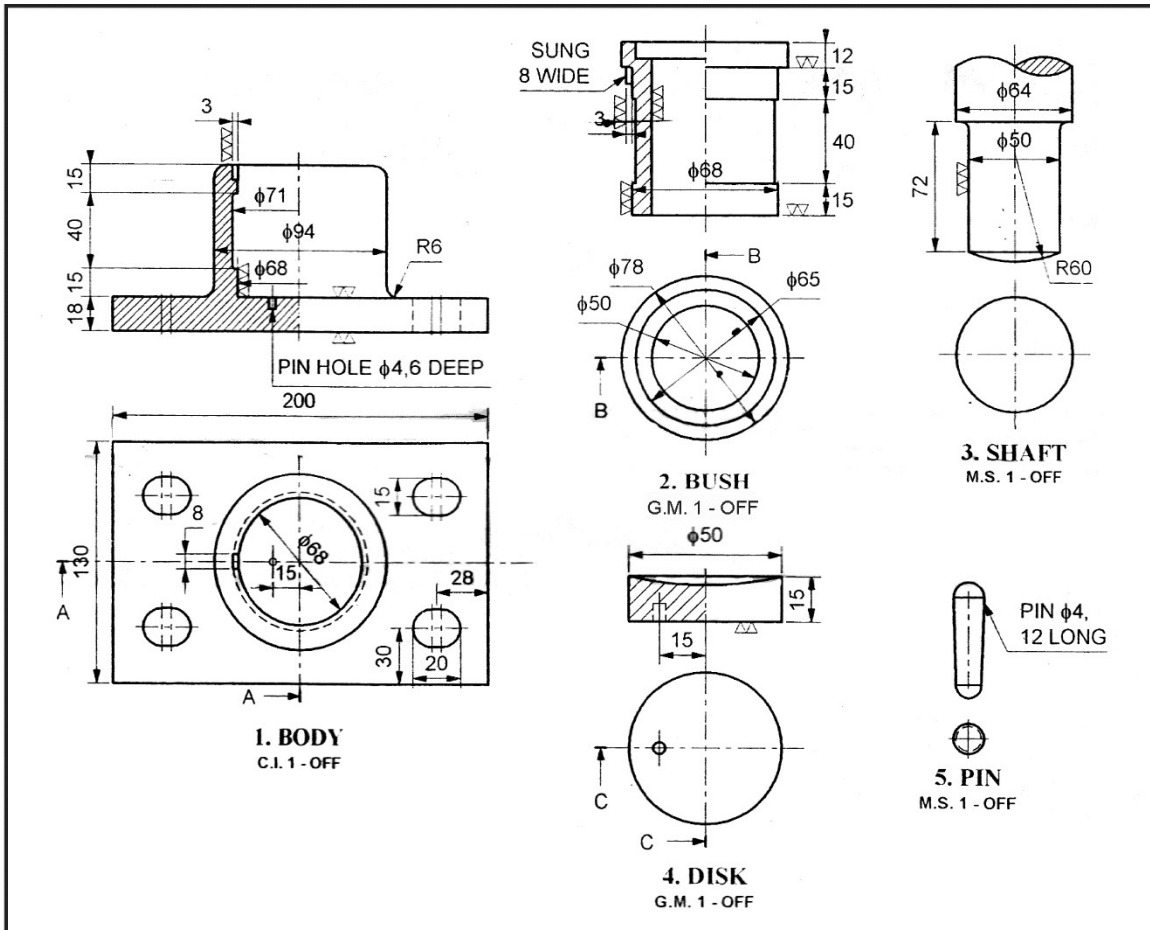


Fig. 5

(b) Fig. 7 shows assembly of the tail stock. Draw the following details :

- (i) Body sectional FV
- (ii) Barrel
- (iii) Hand wheel (two views)
- (iv) Spindle bearing (two views)

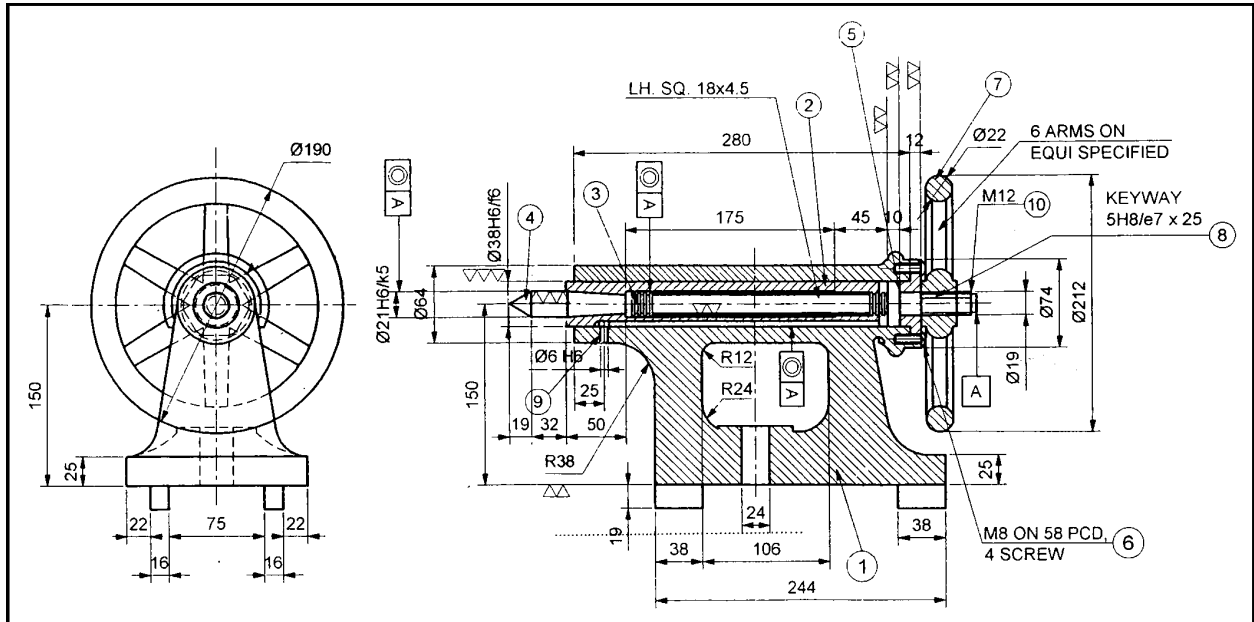


Fig. 7

