

22341

24225

4 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

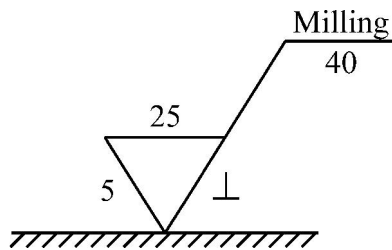
1. Attempt any FIVE of the following :

10

- (a) Draw the conventional representation of the following :
 - (i) Diamond knurling
 - (ii) Glass
- (b) Draw the conventional representation of the following :
 - (i) Bearing
 - (ii) Elbow



- (c) Draw the actual view and conventional representation of
- (i) Semi elliptic leaf spring
 - (ii) External screw thread
- (d) Draw the conventional representation of Revolved section.
- (e) State the meaning of the machining symbol as shown in fig. below.



- (f) Draw the conventional representation of the following :
- (i) Check valve
 - (ii) Tee
- (g) Draw the conventional representation of following machine operation :
- (i) Counter Bore
 - (ii) Bevelled

2. Attempt any TWO of the following :

12

- (a) A square prism side of base 40 mm, height 75 mm is kept on the H.P. on it's base with it's rectangular faces equally inclined to V.P. It is penetrated by horizontal square prism of side of base 30 mm, axis length 75 mm such that the axis of two prism bisects each other at right angles. The two rectangular faces of the horizontal square prism are equally inclined to H.P. and axis is parallel to both H.P. and V.P. Draw the projection of solids 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 H.P. and V.P. The two axes are 9 mm apart. Draw the projections of two cylinder showing curves of intersection. Assume axis length for both cylinders.
- (c) A cone with base diameter 70 mm and axis height 65 mm is kept on H.P. on it's base. It is penetrated by horizontal cylinder of diameter 35 mm with it's axis parallel to V.P. and intersecting the axis of cone at a distance of 20 mm above the base of cone. Draw the projections of solids showing curves of intersection.

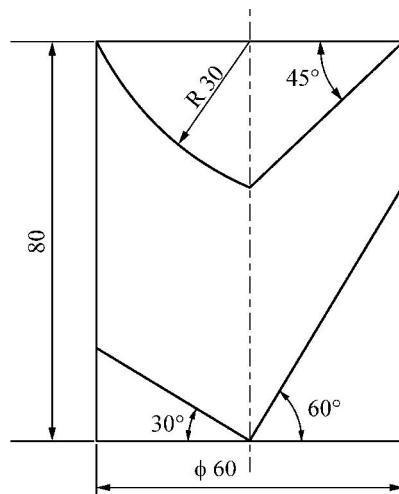
3. (A) Attempt any ONE of the following :

4

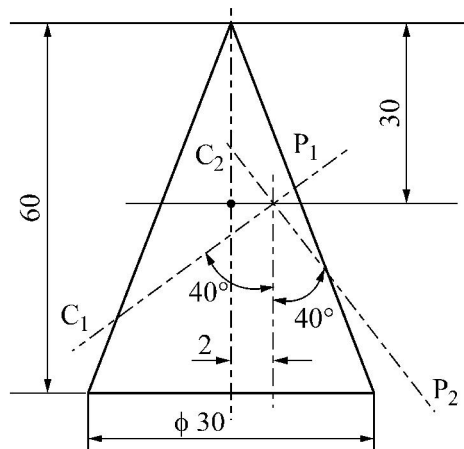
- (a) The shaft has size $\phi 40^{0.05}$ and hole of $\phi 40^{0.00}$. Determine the type of fit between them.
- (b) Draw the symbol of following :
- (i) Cylindricity
 - (ii) Parallelism
 - (iii) Concave fillet weld
 - (iv) Seam weld

(B) Attempt any TWO of the following :**12**

- (a) A square pyramid 50 mm edge of base axis 60 mm axis length is resting on its base in the H.P. with edges of base equally inclined to V.P. A square hole with side 25 mm is cut through the square pyramid such that its axis intersect the axis of the pyramid 22 mm above the base. The axis of hole is perpendicular to V.P. All the faces of square holes are equally inclined with H.P. Draw the development of lateral surface of pyramid.
- (b) Draw the development of lateral surface of the cylinder shown in Fig. No. 1.

**Fig. No.-1**

- (c) The Fig. No. 2 shows the elevation of a cut cone cut by two cutting plane C_1P_1 and C_2P_2 . Draw the development of lateral surface of the cone removing the portion containing apex.

**Fig. No.-2**

4. Attempt the following question :

16

Fig. No. 3 shows the assembly of universal coupling. Attempt any TWO of the following :

- Draw the sectional front view and top view of the fork.
- Draw the front view and top view of centre block and pin.
- Draw the front view and top view of collar, shaft and key.

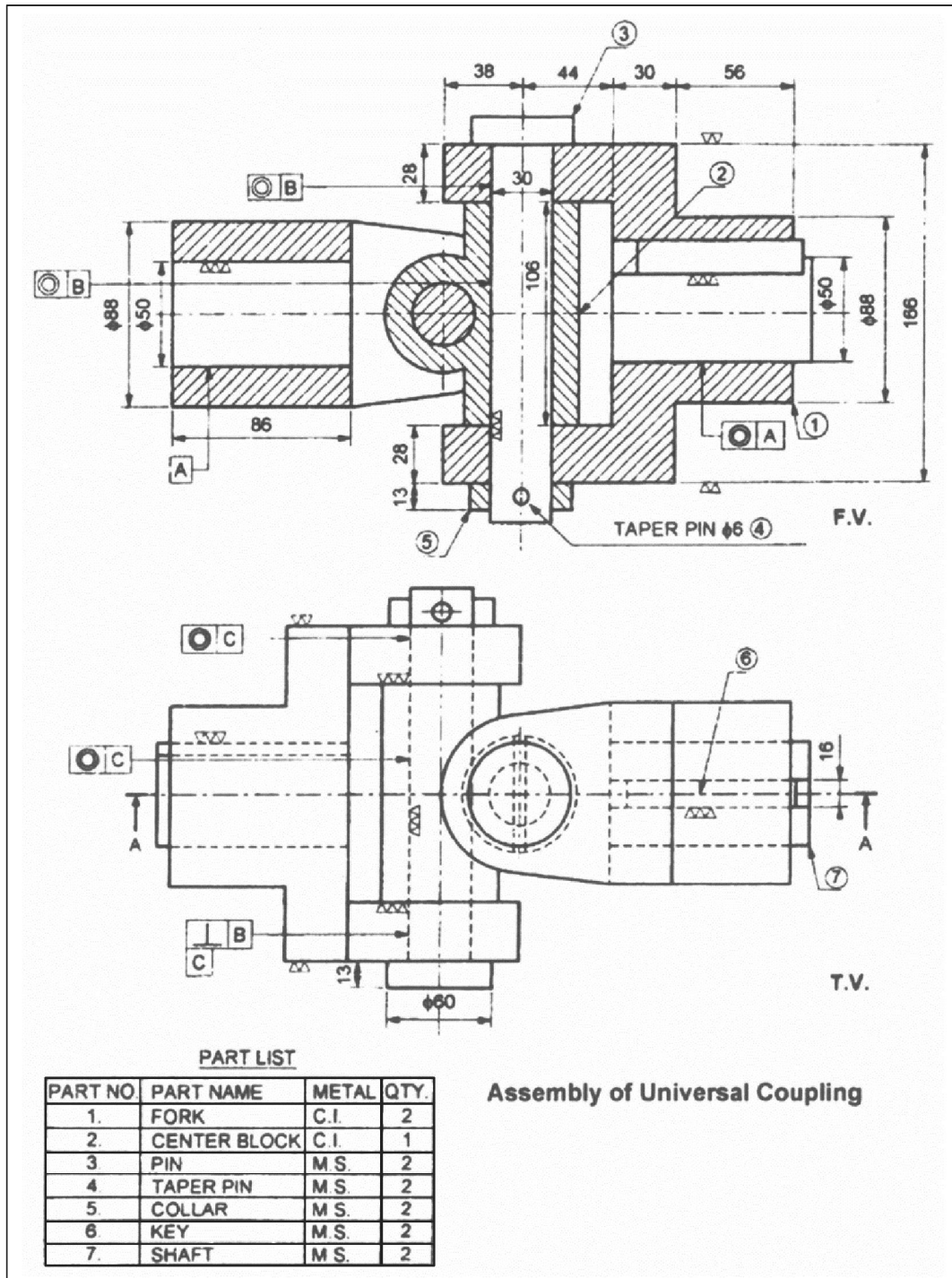


Fig. No.-3

5. Attempt any ONE of the following :

- (a) Fig. No. 4 shows the details of Lathe tool post :
- Draw sectional front view;
 - Top view of the assembly.
- Also prepare bill of material.

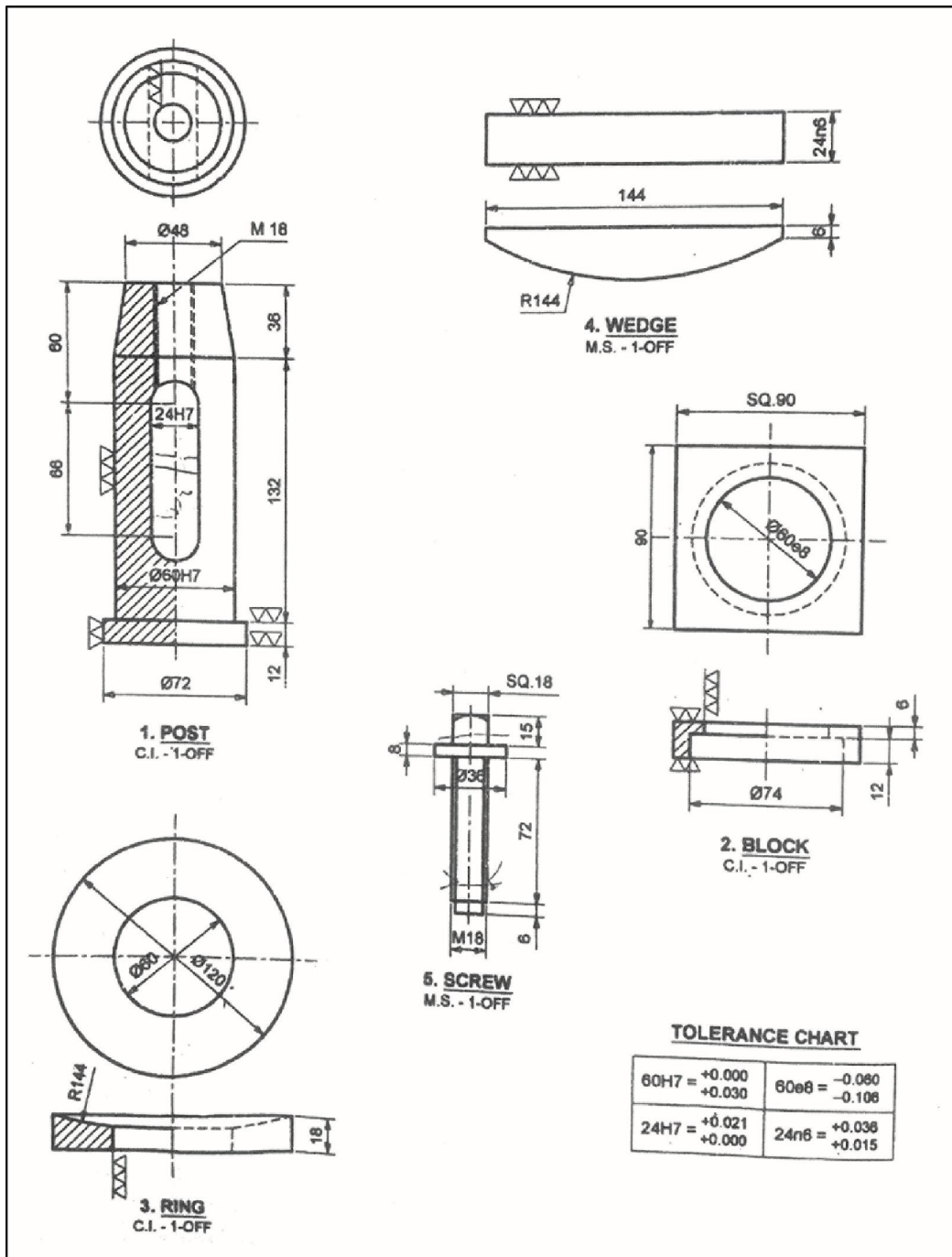


Fig. No.-4

- (b) Fig. No. 5 shows the details of screw jack :
 Draw the
 (i) Sectional front view
 (ii) Top view
 Also prepare bill of material.

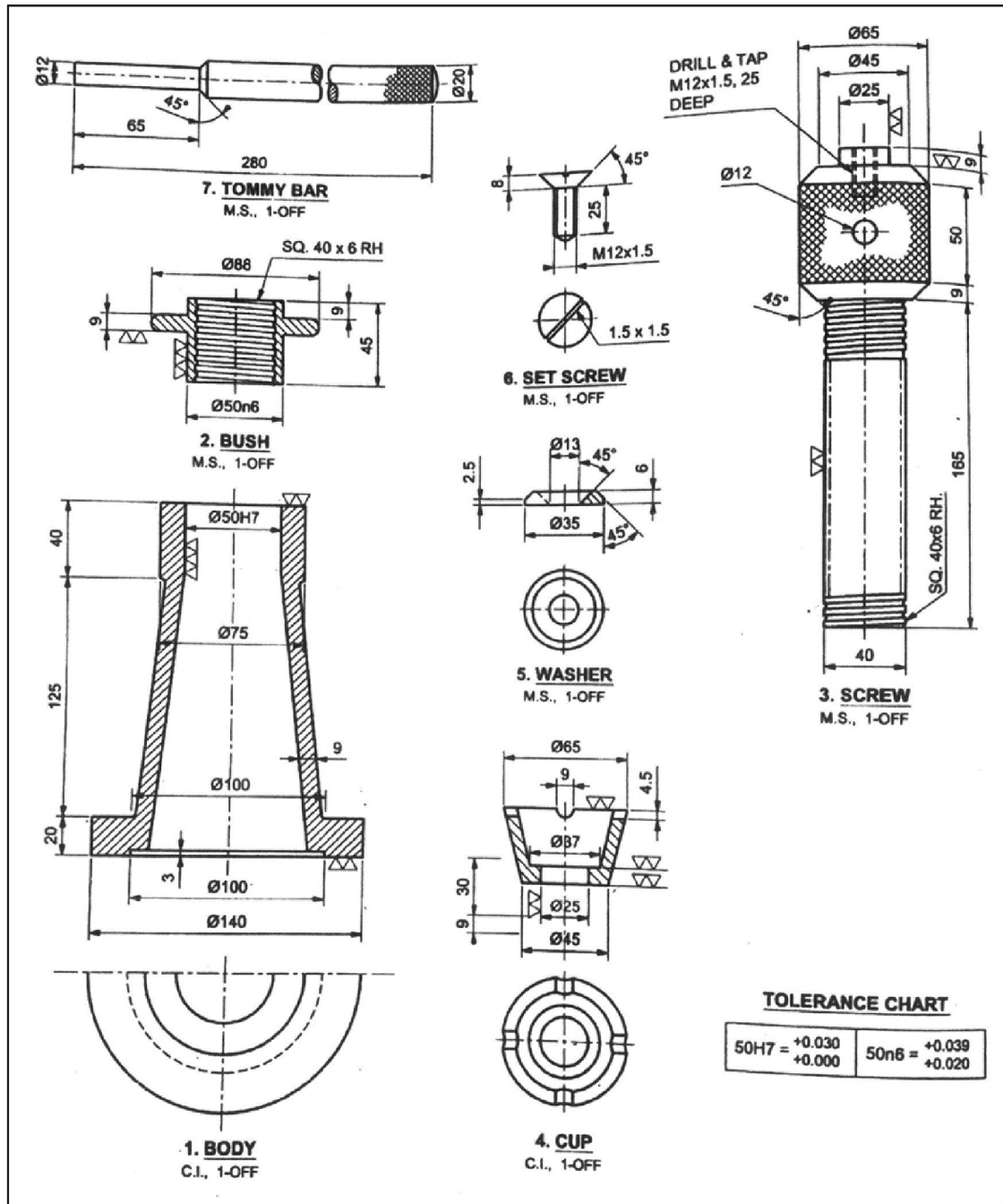


Fig. No.-5

