Con. 5981-09. SP-7328

(REVISED COURSE)

(4 Hours) [Total Marks : 100

N.B.:(1) **All** questions are **compulsory.**
(2) **Only drawing papers** are to be used for **answering.**
(3) Assume **suitable** missing dimensions or **data** if any.
(4) Use only **first angle method** of projection.

1. A vertical cylinder of 90 mm diameter is penetrated by another cylinder of 60 mm diameter, axis of which is parallel to both the planes. The distance between the two axes is 10 mm. Draw the projections showing curves of intersection. **10**

2. Complete front elevation and an incomplete plan of an Angle bracket are shown in **figure No. (1)** below. The hexagonal hole in the figure is portioned on the axis of symmetry omitting all hidden detail, draw the following :—
   (a) The plan **4**
   (b) Left hand side view **4**
   (c) Auxiliary view as scan the direction of A (partial) **2**

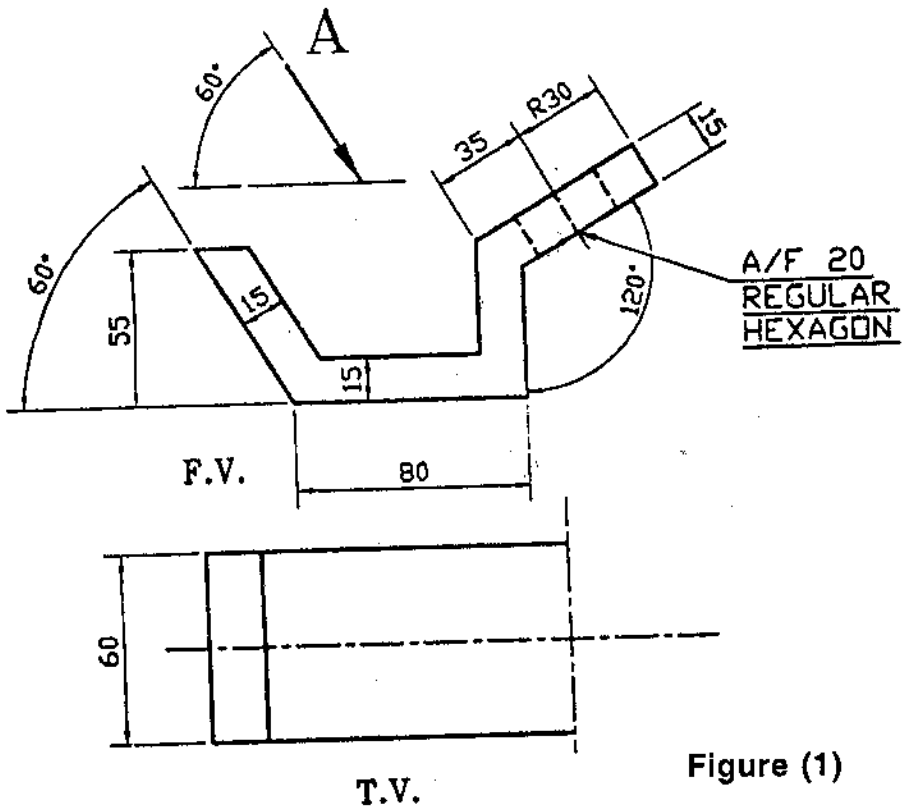


Figure (1)

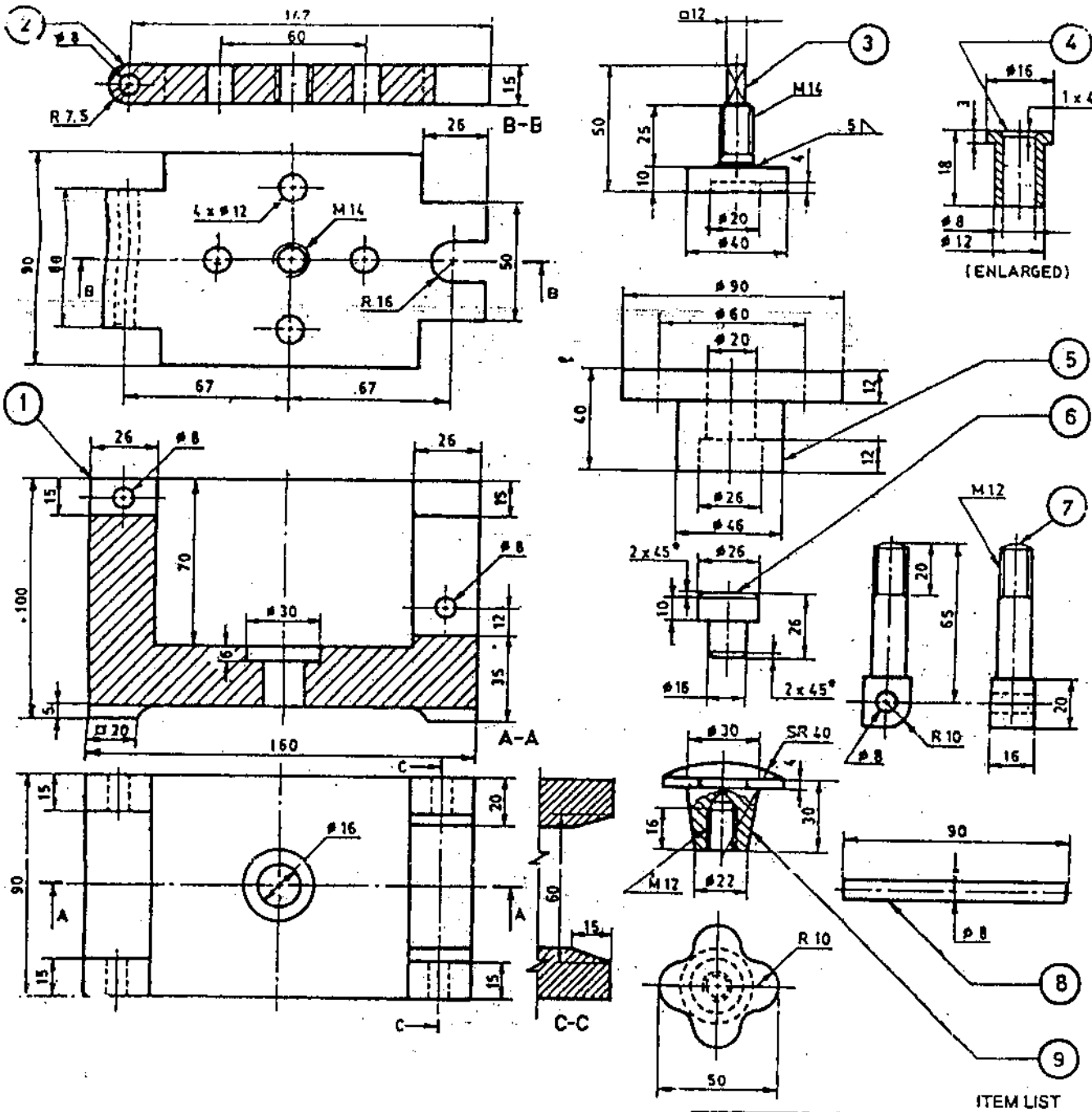
3. Draw free hand proportionate sketches or by using instruments the following machine elements. (any **two**) :— **10**
   (a) Protected type flange coupling
   (b) Socket and spigot joint
   (c) Knuckle joint.

4. (a) Draw the profile of three numbers of involute teeth for a gear having 24 teeth and a module pitch of 10 mm, assuming pressure angle of $14^1/_2°$. **10**
   (b) Explain the following with sketches (any **two**) :— **10**
      (i) Three types of fits
      (ii) Tolerance zone and cover deviation
      (iii) Locking arrangement for nuts.

P.T.O.

5. **Figure No.(2)** shows the details of a Drill Jig Assemble the parts and draw to suitable scale.
   (a) Sectional F-V **15**
   (b) Top view **10**

   Also prepare the bill of material.



ITEM LIST

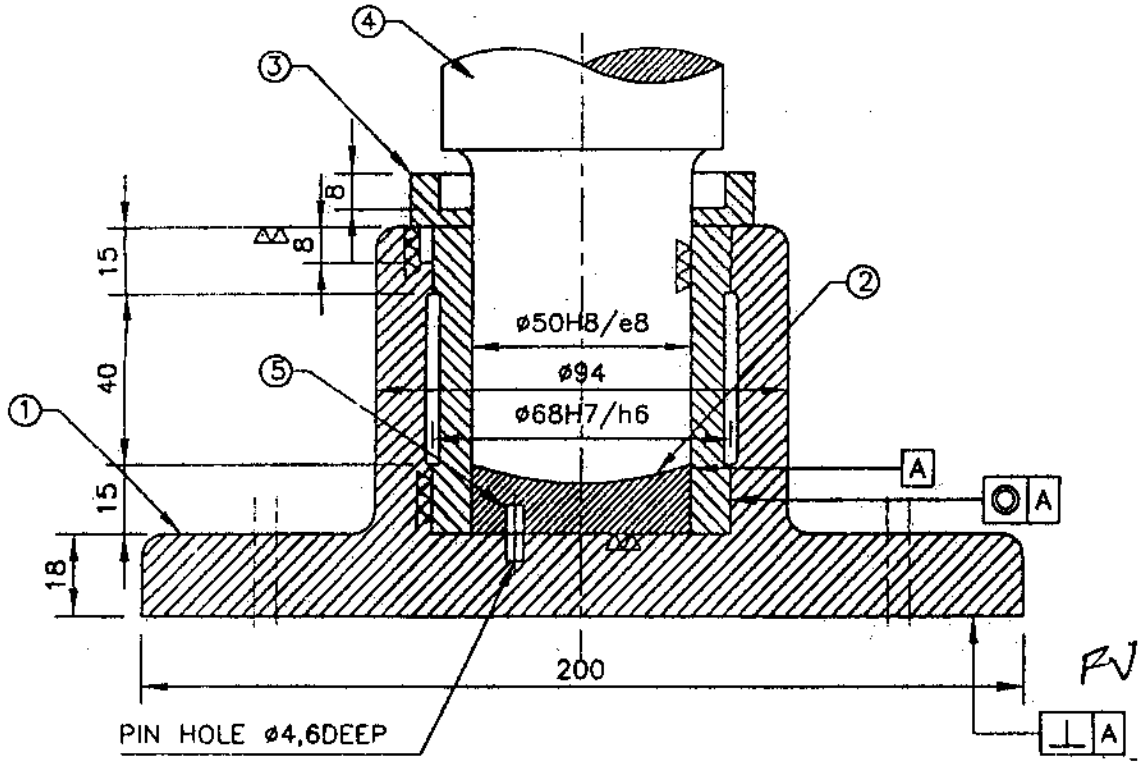
Item	Description	Qty.	Material
1	Base	1	C.I.
2	Latch plate	1	M.S.
3	Screw for work piece	1	M.S.
4	Jig bush	4	Brass
5	Work piece	1	C.I.
6	Locating pin	1	Steel
7	Latch bolt	1	M.S.
8	Hinge pin	2	M.S
9	Bolt cap (Starred)	1	M.S

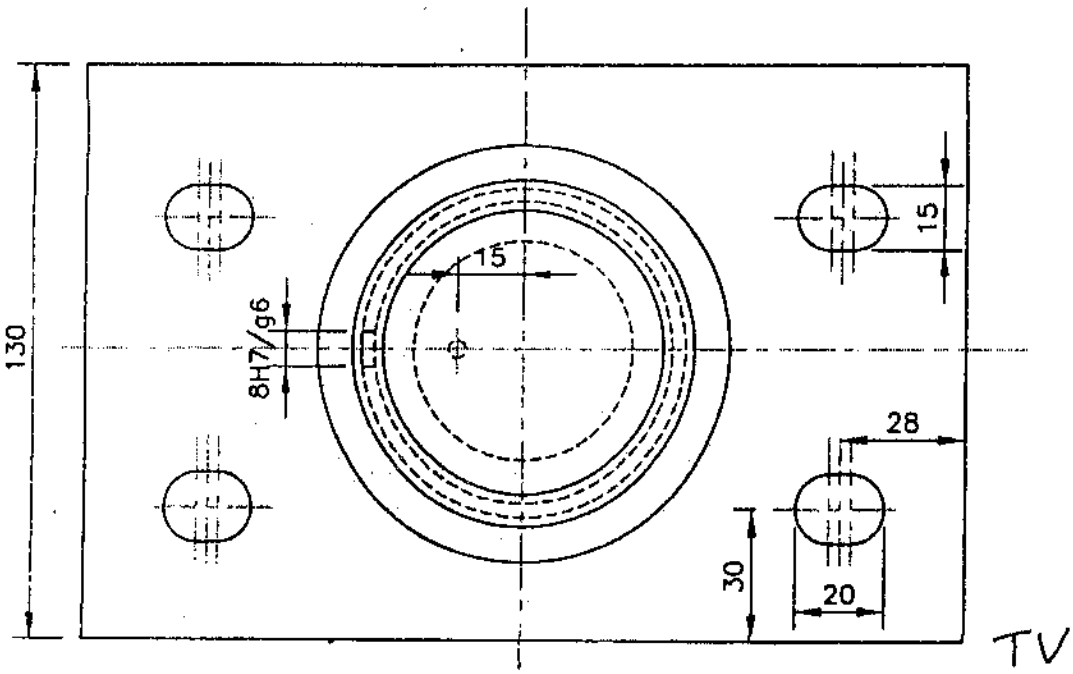
DRILL JIG
(LATCH TYPE)

(Fig no 2)

6. **Figure No.** (3) shows the assembly of a "foot step bearing". Draw the following views :

(a)	Body	—	Sectional FV	4
			Top view	4
(b)	Bush	—	Sectional FV	4
			Top view	4
(c)	Disc	—	Sectional FV	3
			Top view	2
(d)	Shaft	—	F.V.	2
			T.V.	2





FIT CHART

50H8/e8 = CLEARENCE FIT
68H7/h6 = CLEARENCE FIT
8H7/g6 = CLEARENCE FIT

PART LIST

PART No.	PART NAME	MELT.	QTY.
1	BODY	C.I.	1
2	DISC	G.M.	1
3	BUSH	G.M.	1
4	SHAFT	M.S.	1
5	PIN	M.S.	1

ASSEMBLY OF FOOTSTEP BEARING (figure 3)