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***B.Tech. Degree III Semester Examination in
Marine Engineering December 2019***

**MRE 1306 MACHINE DRAWING
(2013 Scheme)**

Time: 4 Hours

Maximum Marks: 100

- I. Draw two views of the following with diameter $d = 24$ mm. (20)
- Lifting eye bolt
 - Hexagonal socket headed cap screws
 - Slotted grub screw
 - Square headed set screw
- OR**
- II. Draw the following views of the shaft support shown in the figure 1. (20)
- Elevation
 - Sectional right side view
- III. Assemble the parts shown in the figure 2 and draw the following views of the Universal coupling. (30)
- Top half sectional elevation
 - An end view
- OR**
- IV. Assemble the parts shown in the figure 3 and draw the following views of the stuffing box. (30)
- Left half sectional elevation
 - Plan
- V. Assemble the parts shown in the figure 4 and draw the following views of the vertical cross head. (50)
- Left half sectional elevation
 - Plan
- OR**
- VI. Assemble the parts shown in the figure 5 and draw the following views of the Cylinder Relief valve. (50)
- Left half sectional elevation
 - Plan

(P.T.O.)

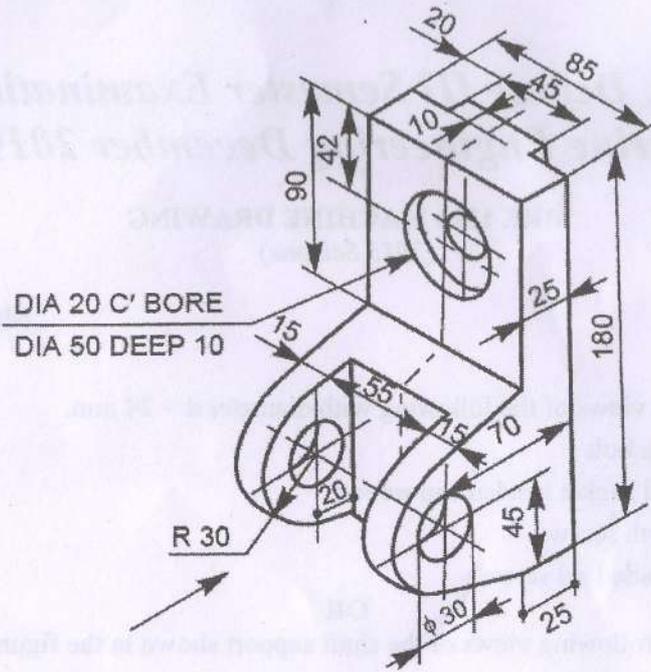


Figure 1 Shaft support

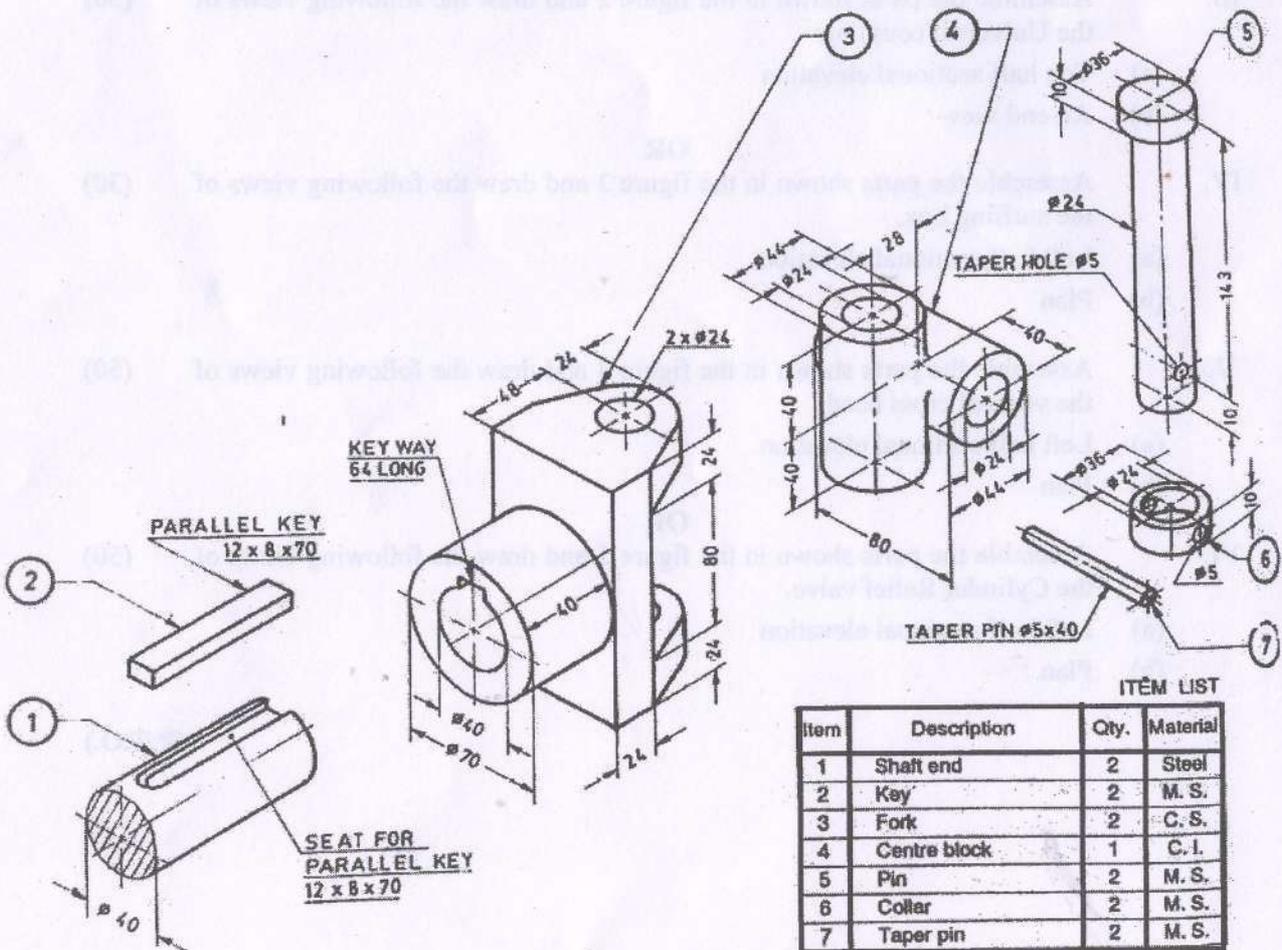
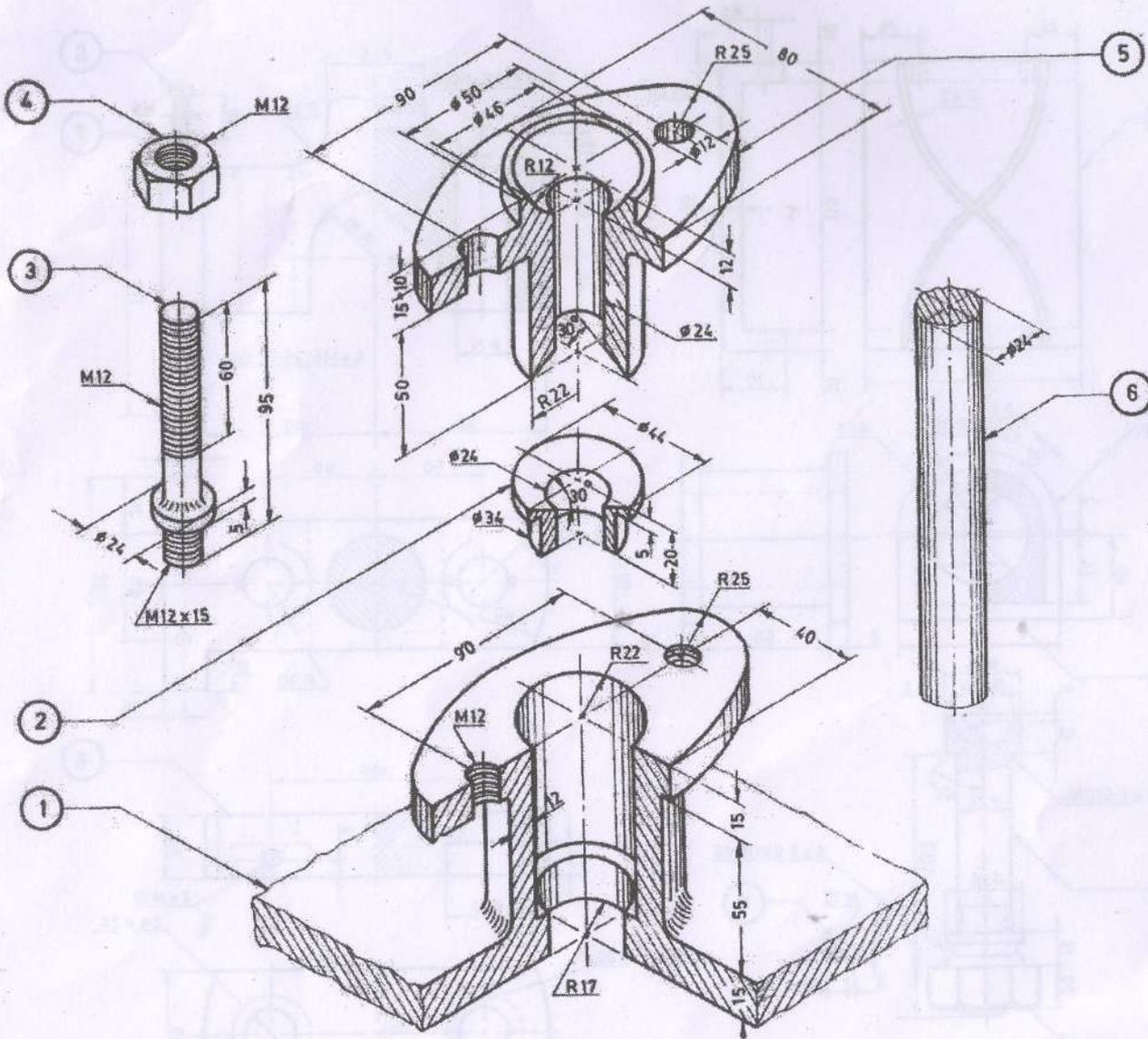


Figure 2 Universal coupling

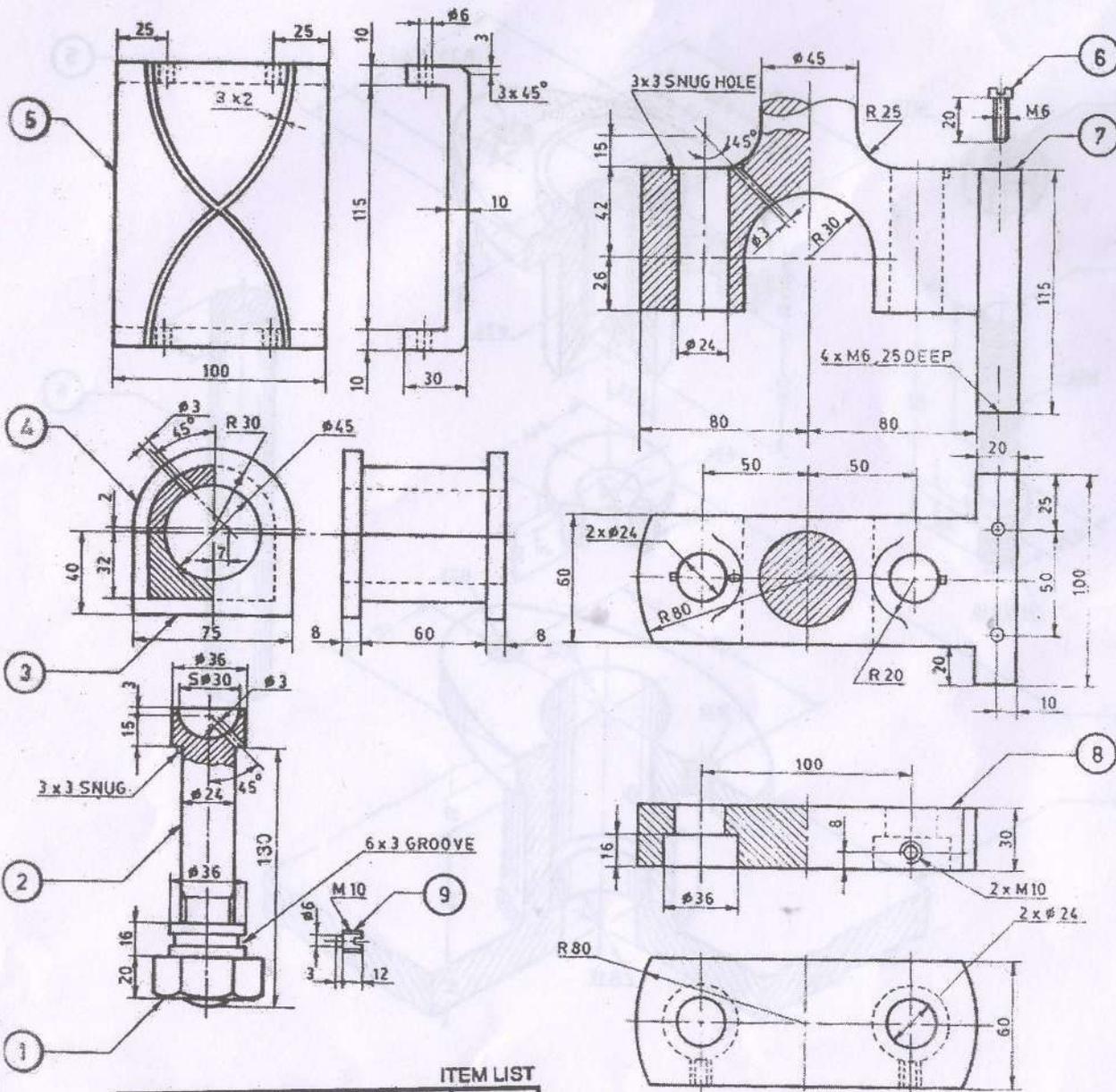


ITEM LIST

Item	Description	Qty.	Material
1	Body	1	C. I.
2	Gland bush	1	Brass
3	Stud	2	M. S.
4	Nut	2	M. S.
5	Gland	1	C. I.
6	Piston rod	1	Steel,

Figure 3 Stuffing box

(P.T.O.)

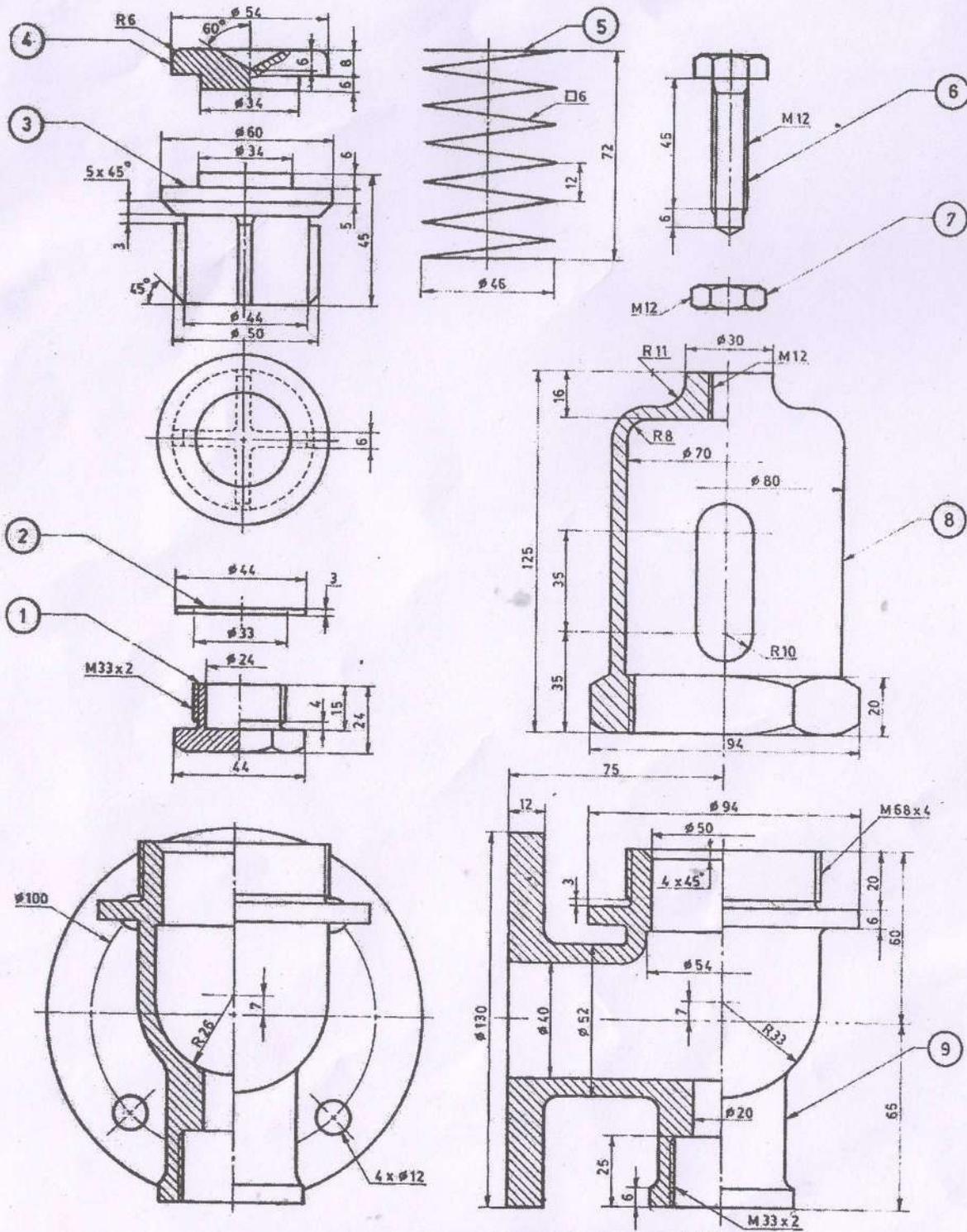


ITEM LIST

Item	Description	Qty.	Material
1	Grooved nut	2	M. S.
2	Bolt	2	M.S.
3	Bearing (Rectangular)	1	Brass
4	Bearing (Half round)	1	Brass
5	Shoe	1	C.I.
6	Set screw	4	M.S
7	Piston rod end	1	Steel
8	End cap	1	C.S.
9	Grub Screw	2	M.S.

Figure 4 Vertical Cross head

(Contd...5)



SL No.	Part	Material	SL No.	Part	Material
1.	Plug Screw	G. M.	6.	Screw	M. S.
2.	Washer	Aluminium	7.	Lock nut	M. S.
3.	Valve	G. M.	8.	Cover	G. M.
4.	Spring seat	G. M.	9.	Body	G. M.
5.	Spring	Steel			

Figure 5 Cylinder Relief valve
