CMR INSTITUTE OF TECHNOLOGY

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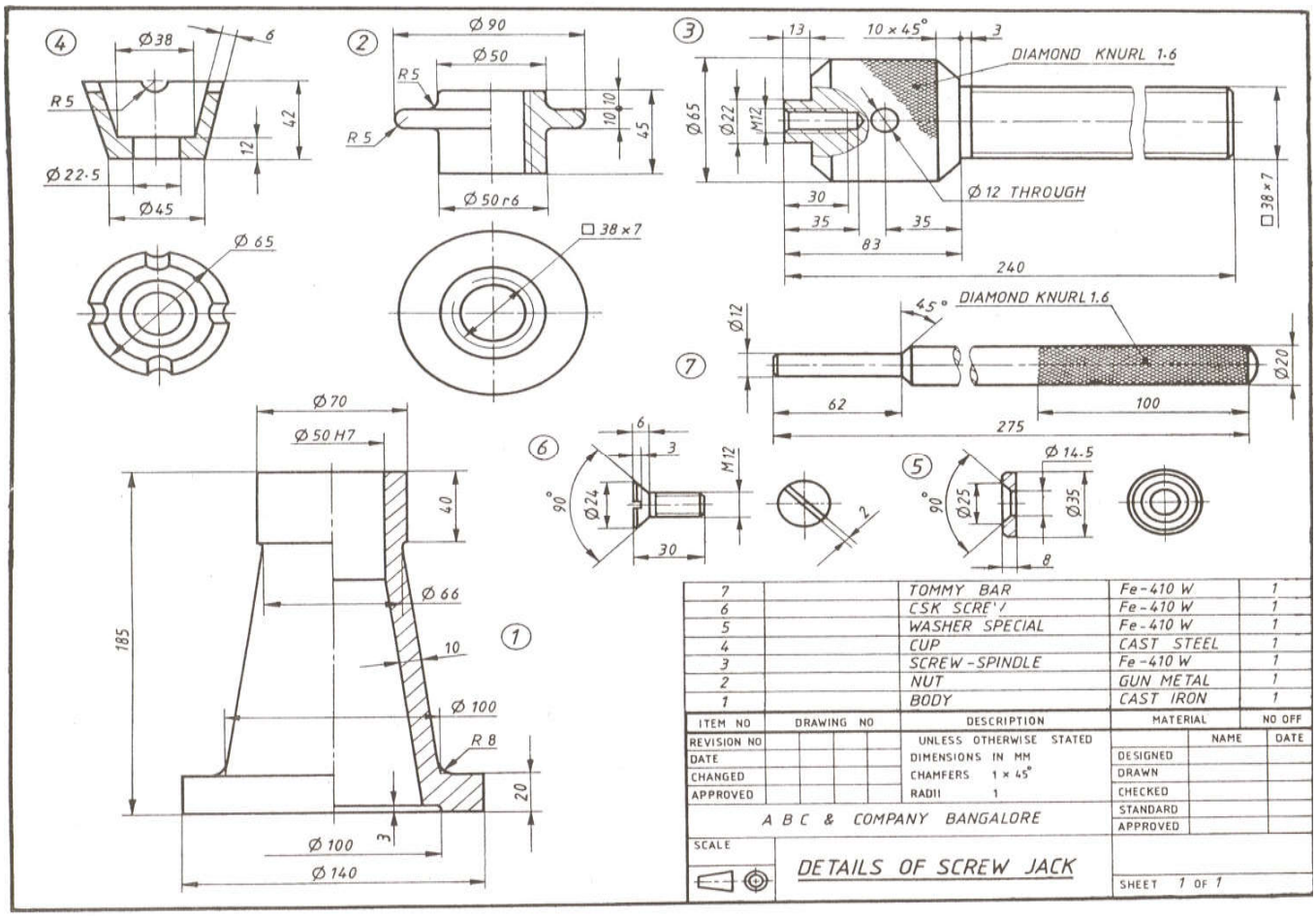
Internal Assesment Test - II

Sub:	COMPUTER AIDED MACHINE DRAWING							Code:	15ME36A
Date:	09/11/2017	Duration:	90 mins	Max Marks:	50	Sem:	3	Branch:	MECH.

Answer all

		Marks	OBE CO	OBE RBT
1.	Draw two views of a hexagonal headed bolt and nut with washer across corners (assembly) for a 25mm diameter bolt. Take the length of the bolt equal to 100mm and a thread length of 50mm.	[16]	CO3	L2
2.	Draw the sectional front view and top view of a single riveted butt joint with double cover strap to connect two plates of 12mm thickness. Use snap head rivet and show all the calculation on the answer sheet. Use chain riveting arrangement.	[16]	CO4	L3
3.	Figure shows the details of Screw jack. Assemble the parts and show a. Front view right half in section & b. Top view in section.	[18]	CO6	L4



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Internal Assessment Test II –Nov. 2017

Sub:	Computer Aided Machine Drawing					Sub Code:	15ME36A	Branch:	MECH.
Date:	09/11/2017	Duration:	90 min's	Max Marks:	50	Sem / Sec:	3 (A&B)		

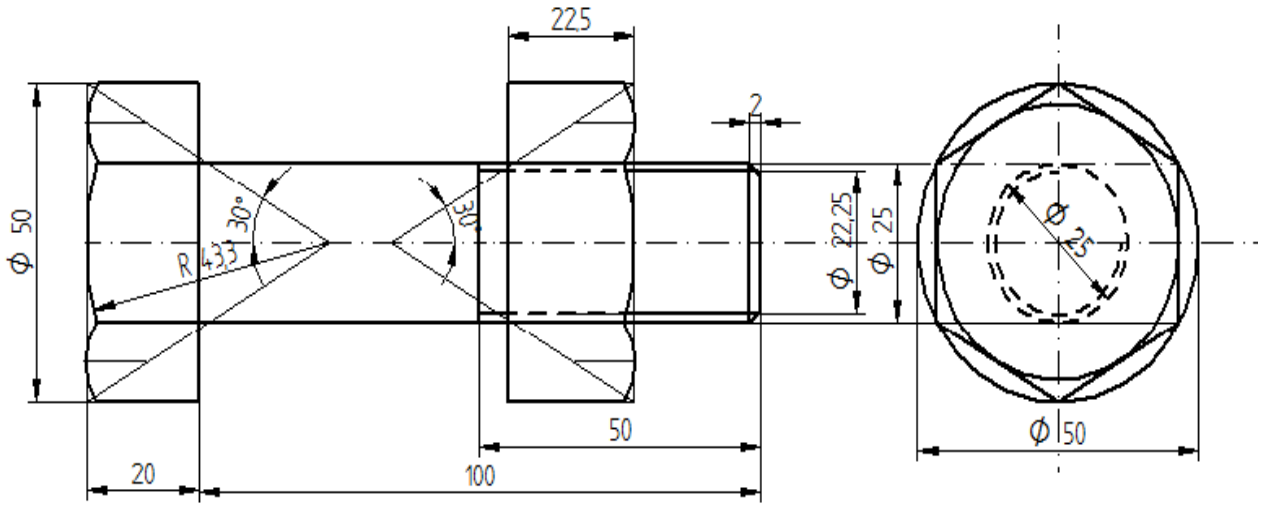
Scheme & Solution

1. Draw two views of a hexagonal headed bolt and nut with washer across corners (assembly) for a 25mm diameter bolt. Take the length of the bolt equal to 100mm and a thread length of 50mm.

16 Marks

Solution:
Given d=25mm
L=100 &
Thread length X=50mm
Wc =2d= 50mm
Bt = 0.8d = 20mm
Nt= 0.9d= 22.5mm
Rd= 0.9d = 22.5mm
Chamfer angle=30°
Chamfer at the bolt end= 01d*45°=2*45°

Solution :
d=25mm
Wc=2d =50mm
Bt= 0.8d=20mm
Nt=0.9d= 22.5mm
Rd = 0.9d=22.5mm
Wd=2d+3=53mm
Wt=0.12d=3mm



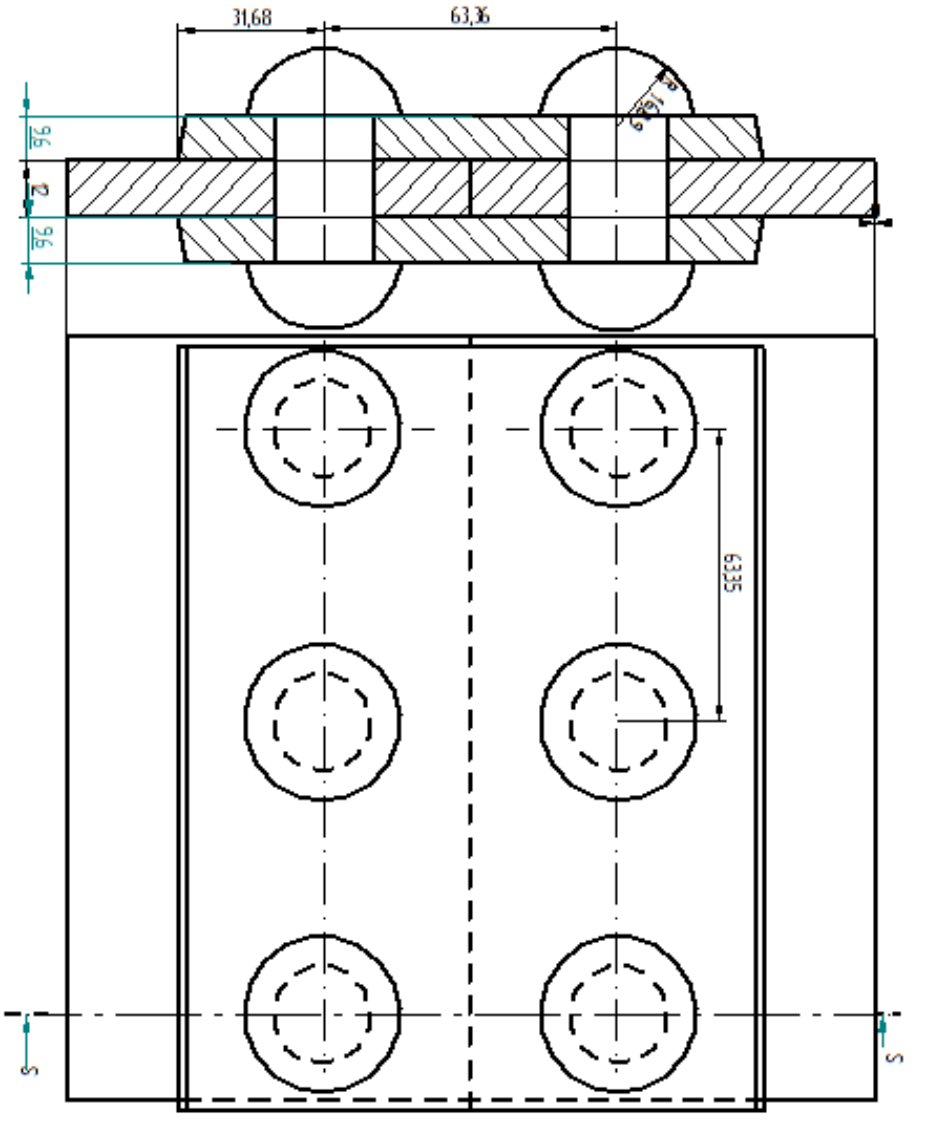
Scheme:
calculations=2 Marks
front view= 6 Marks
Side view = 6 Marks
Dimensions = 2 Marks

2. Draw the sectional front view and top view of a single riveted butt joint with double cover strap to connect two plates of 12mm thickness. Use snap head rivet and show all the calculation on the answer sheet. Use chain riveting arrangement.

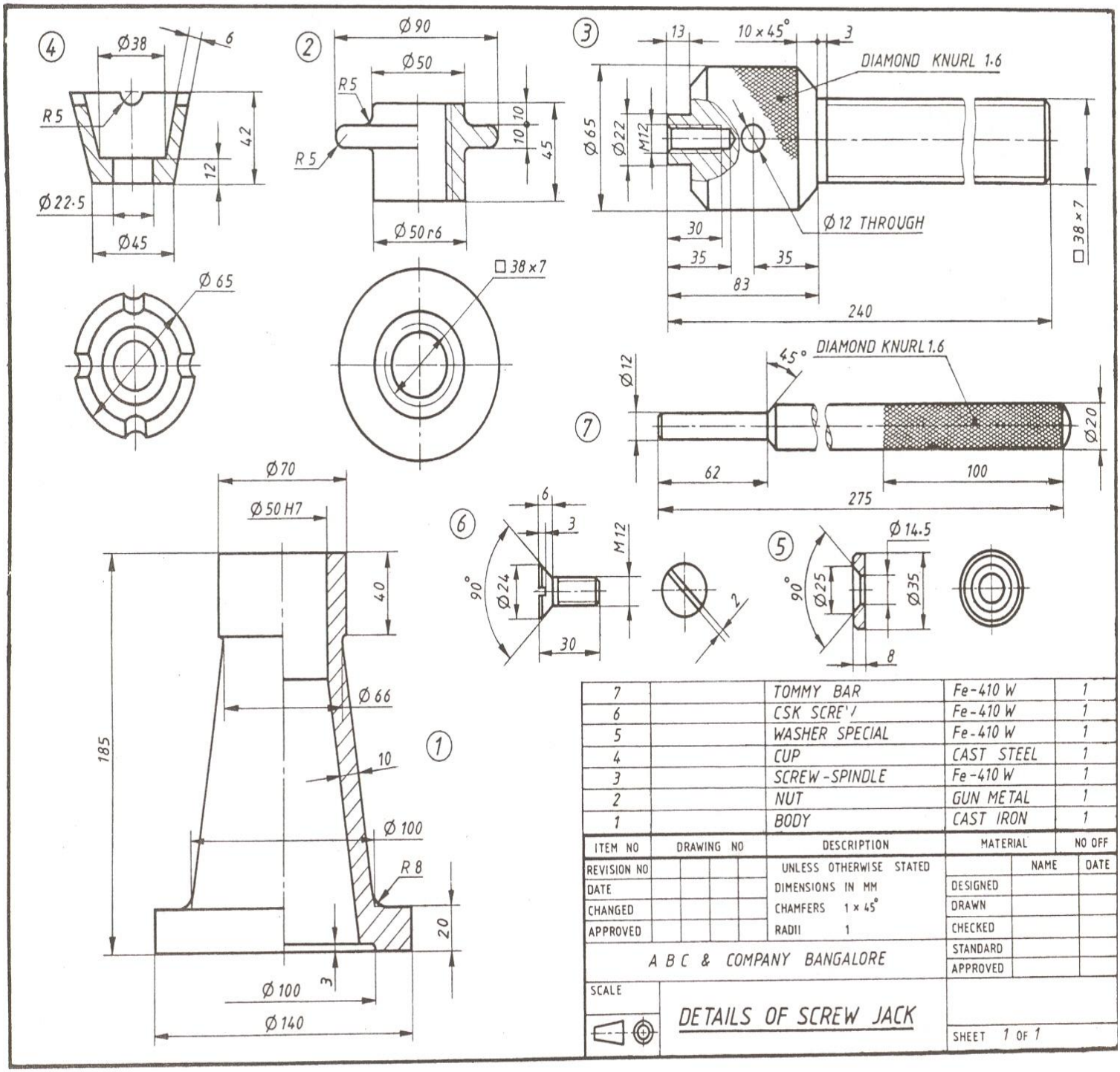
16 Marks

Solution:
Given t= 12mm
t2=0.8t=9.6mm
d=6√t=20.78mm
P=3d=63.36mm
1.5d = 31.6mm
Snap head
H=0.7d=14.54mm
R=0.8d=16.62mm

Scheme:
Dimensions =2 marks
Calculations= 2 Marks
Front view in section =6 Marks
Top view with section plane=6 Marks



3. Figure shows the details of Screw jack. Assemble the parts and show
   a. Front view right half in section & b. Top view in section. 18 Marks



7		TOMMY BAR	Fe-410 W	1
6		CSK SCREW	Fe-410 W	1
5		WASHER SPECIAL	Fe-410 W	1
4		CUP	CAST STEEL	1
3		SCREW-SPINDLE	Fe-410 W	1
2		NUT	GUN METAL	1
1		BODY	CAST IRON	1

ITEM NO	DRAWING NO	DESCRIPTION	MATERIAL	NO OFF
REVISION NO		UNLESS OTHERWISE STATED		NAME / DATE
DATE		DIMENSIONS IN MM	DESIGNED	
CHANGED		CHAMFERS 1 × 45°	DRAWN	
APPROVED		RADII 1	CHECKED	
		A B C & COMPANY BANGALORE	STANDARD	
			APPROVED	

SCALE

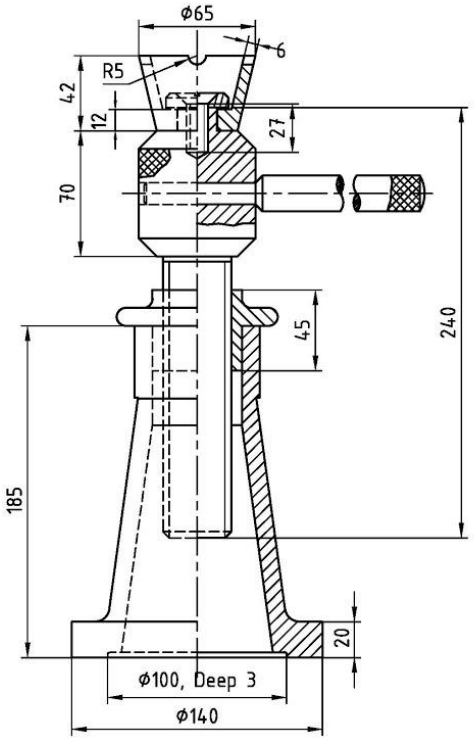
DETAILS OF SCREW JACK

SHEET 1 OF 1

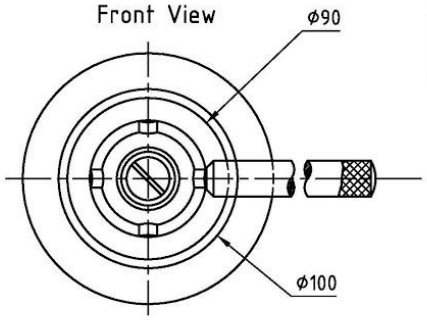
Solution:

Scheme:

Front view – 6 marks
Sectional view – 3 Marks
Top view- 6 Marks
Section plane – 3 Marks
(Rough sketch without taking dimension)



Half Sectional
Front View



Top View

PART NO	NAME	MATERIAL	NO. OFF
01	BODY	CAST IRON	1
02	SCREW SPINDLE	Fe 410 W	1
03	CUP	CAST STEEL	1
04	NUT	GUN METAL	1
05	WASHER	Fe 410 W	1
06	CSK SCREW	Fe 410 W	6
07	TOMMY BAR	Fe 410 W	1

ASSEMBLY
DRAWING OF
SCREW JACK