

CBCS 22 SCHEME

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BMEL305

Third Semester B.E. Degree Examination, MAR/APR 2024

INTRODUCTION TO MODELLING & DESIGN FOR MANUFACTURING

Time: 3 Hours

Max. Marks:100

- Note:**
1. Use **First angle** projections only.
 2. All the dimensions are in mm.
 3. If any data is missing it may be suitably assumed and mentioned.

Part A

1. Create a two-dimensional illustration based on the diagram provided in Figure 1

20 Marks

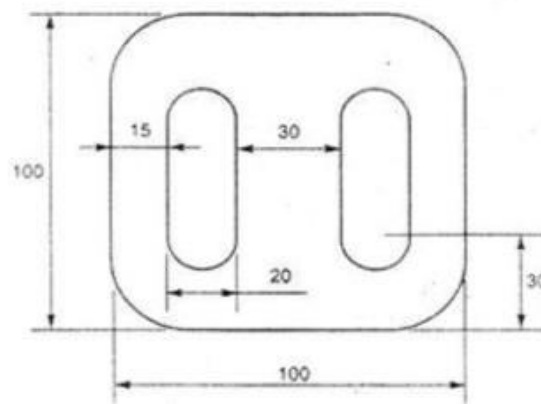


Figure 1

Part B

2. Draw the sectional front view and side view of a “**Flanged Coupling - Protected type**” with diameter $d = 30$ mm.

30 Marks

Part C

3. Figure 2 shows the details of a “**Plummer Block**”. Assemble the parts show the following views.

- a. Half sectional front view.
- b. Top view

50 Marks

OR

4. Figure 3 shows the details of a “**Screw Jack**”. Assemble the parts show the following views.

- a. Half sectional front view.
- b. Top view

50 Marks

Examiner 1

Examiner 2

Name :

Signature with date :

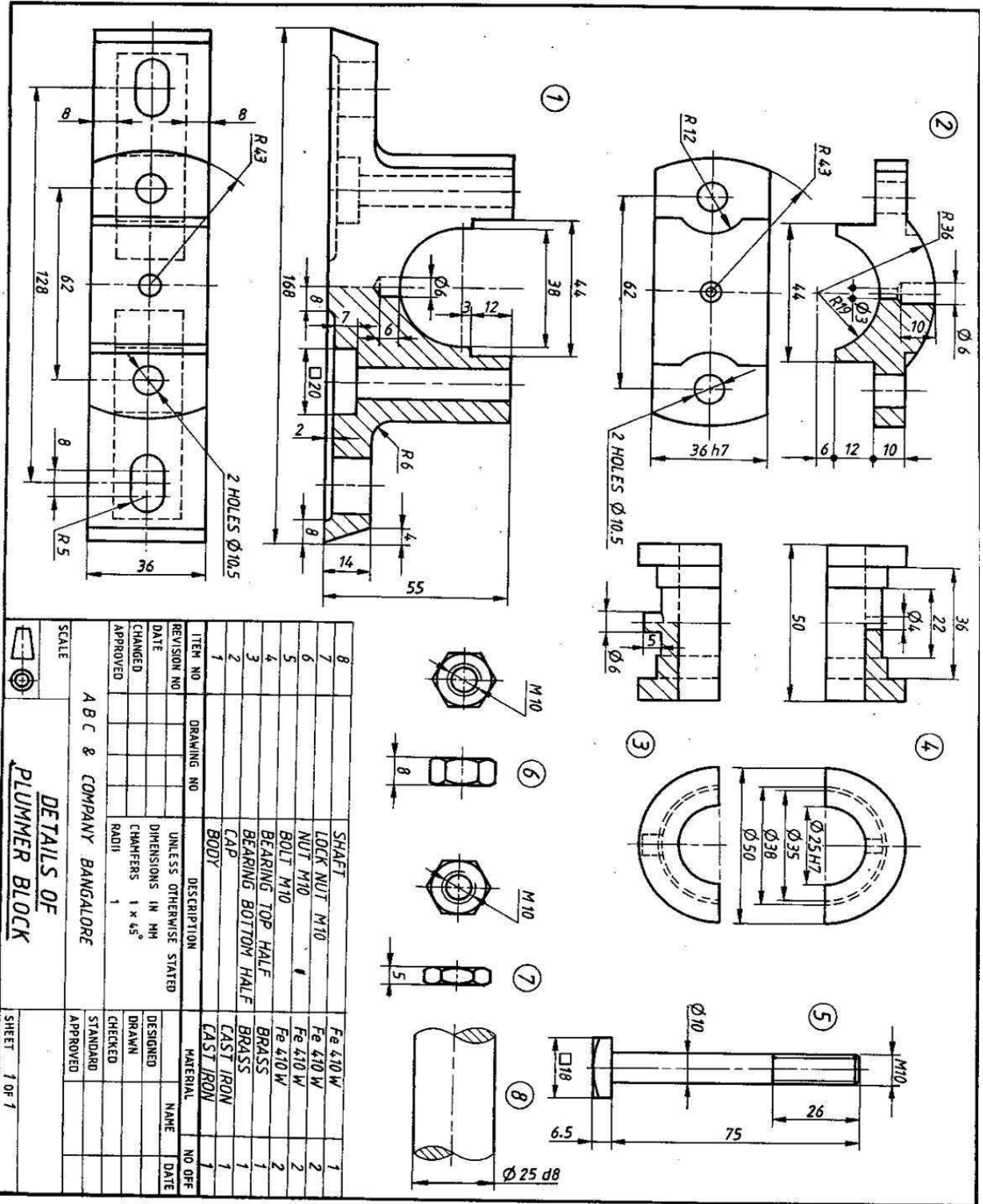


Figure 2 - Plummer Block

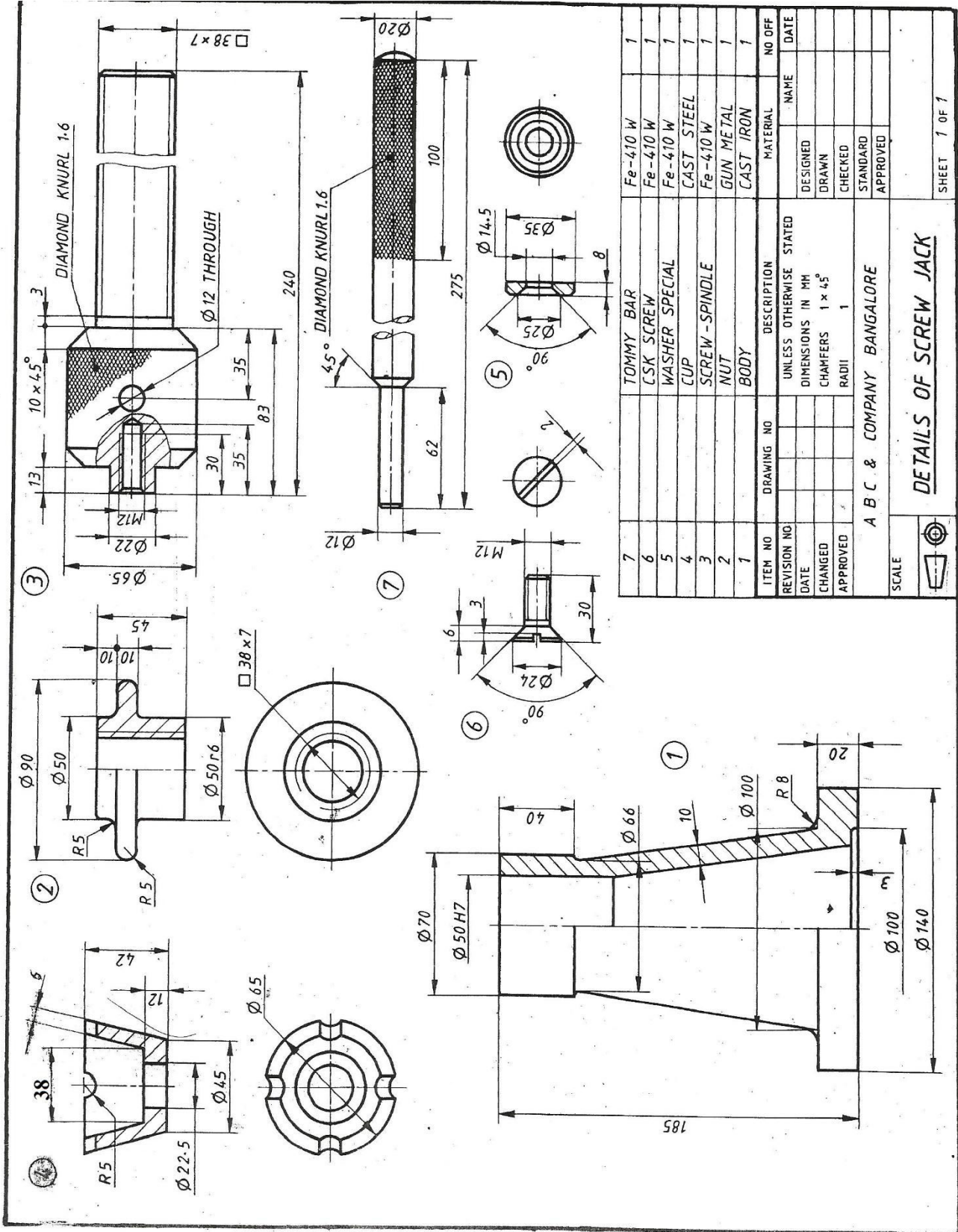


Figure 3 - Screw Jack

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Time: 3 Hours

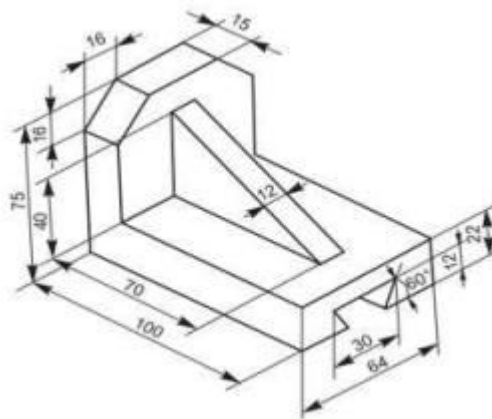
Max. Marks:100

- Note:**
1. Use **First angle** projections only.
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Part A

1. Create a three-dimensional illustration based on the diagram provided.

20 Marks



Part B

2. Draw the sectional front and top view of “**Knuckle joint**” for diameter 20mm.

30 Marks

Part C

3. Figure 1 shows the details of a “**Screw Jack**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

50 Marks

OR

4. Figure 2 shows the details of a “**Connecting Rod**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

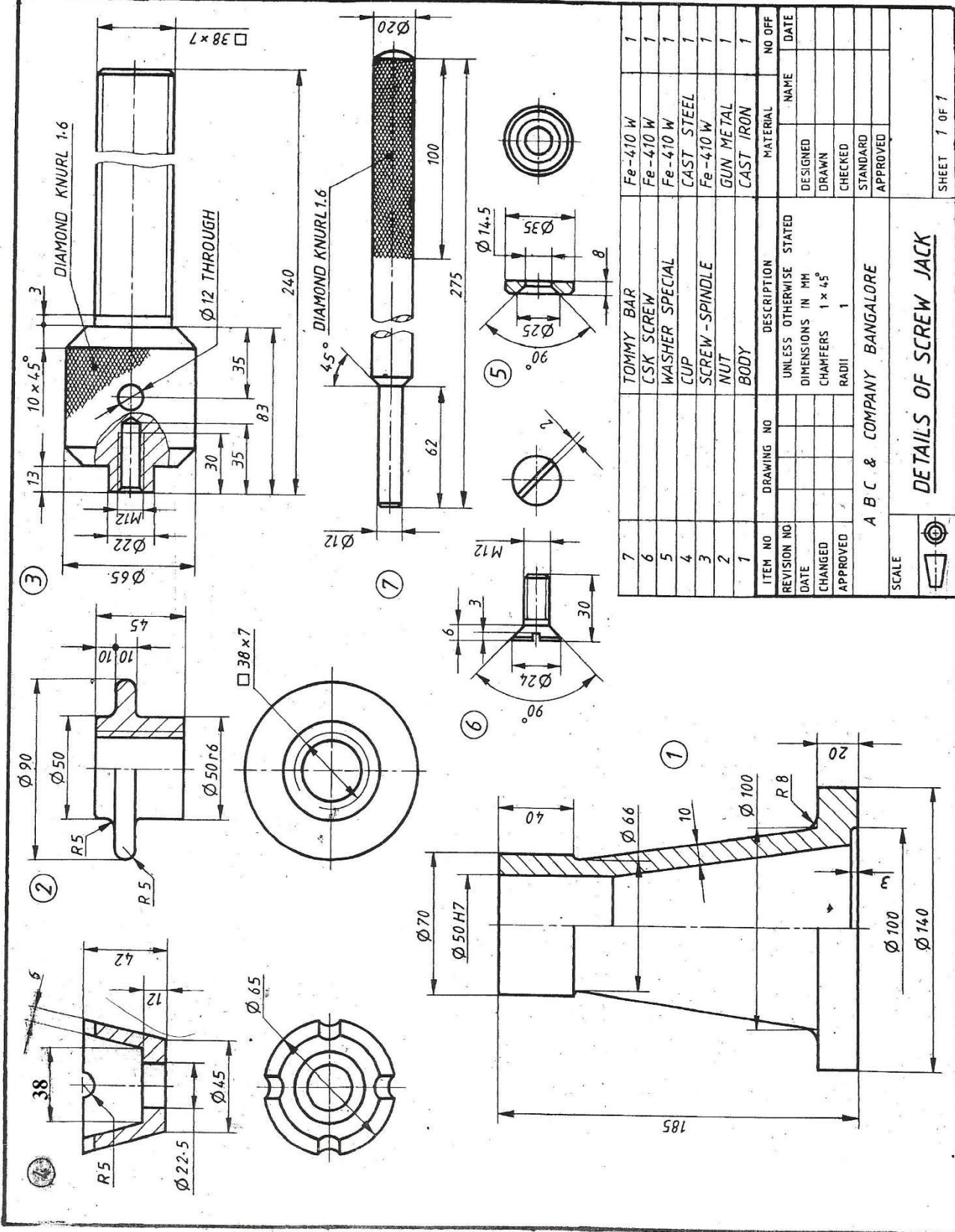
50 Marks

Examiner 1

Examiner 2

Name :

Signature with date :



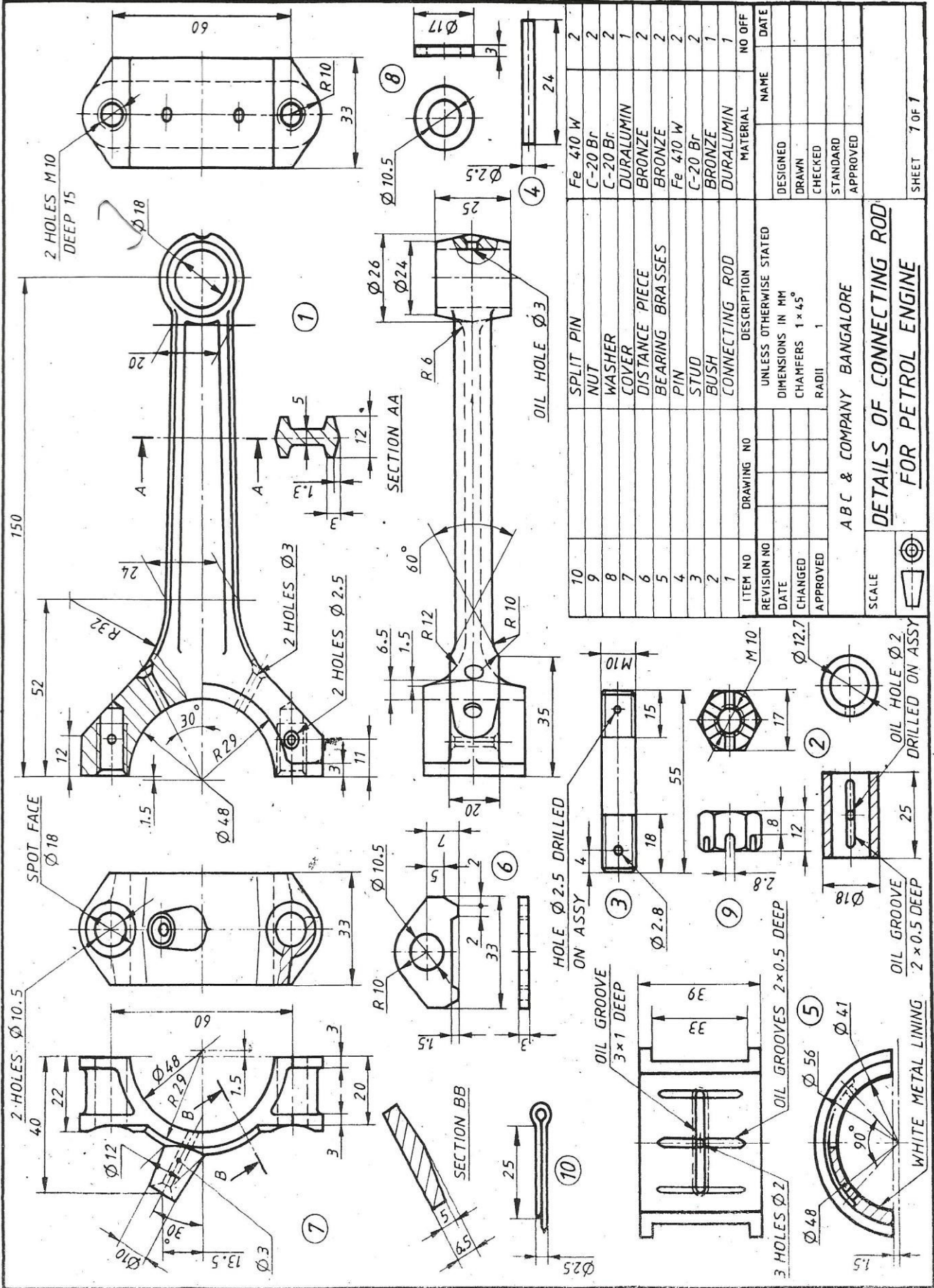
ITEM NO	DRAWING NO	DESCRIPTION	MATERIAL	NO OFF
7		TOMMY BAR	Fe-410 W	1
6		CSK SCREW	Fe-410 W	1
5		WASHER SPECIAL	Fe-410 W	1
4		CUP	CAST STEEL	1
3		SCREW - SPINDLE	Fe-410 W	1
2		NUT	GUN METAL	1
1		BODY	CAST IRON	1

REVISION NO	DATE	CHANGED	APPROVED	DESIGNED	DRAWN	CHECKED	STANDARD	APPROVED

UNLESS OTHERWISE STATED	NAME	DATE
DIMENSIONS IN MM		
CHAMFERS $1 \times 45^\circ$		
RADI		

SCALE		A B C & COMPANY BANGALORE	
DETAILS OF SCREW JACK			
			SHEET 1 OF 1

Details of a screw jack



ITEM NO	DRAWING NO	DESCRIPTION	MATERIAL	NO OFF	NAME	DATE
10		SPLIT PIN	Fe 410 W	2		
9		NUT	C-20 Br	2		
8		WASHER	C-20 Br	2		
7		COVER	DURALUMIN	1		
6		DISTANCE PIECE	BRONZE	2		
5		BEARING BRASSES	BRONZE	2		
4		PIN	Fe 410 W	2		
3		STUD	C-20 Br	2		
2		BUSH	BRONZE	1		
1		CONNECTING ROD	DURALUMIN	1		

REVISION NO	UNLESS OTHERWISE STATED
DATE	DIMENSIONS IN MM
CHANGED	CHAMFERS 1 x 45°
APPROVED	RADI 1

SCALE	ABC & COMPANY BANGALORE
DETAILS OF CONNECTING ROD	
FOR PETROL ENGINE	

Details of a Petrol Engine Connecting Rod

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Max. Marks:100

- Note:**
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Part A

1. Illustrate ISO thread and inspect the analysis for the same, take diameter of thread $d = 25\text{mm}$ and length $L = 60\text{mm}$.

20 Marks

Part B

2. Draw the sectional front and top view of “**Cotter joint**” for diameter 20mm.

30 Marks

Part C

3. Figure 1 shows the details of a “**Screw Jack**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

50 Marks

OR

4. Figure 2 shows the details of a “**Tail Stock**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

50 Marks

Examiner 1

Examiner 2

Name :

Signature with date :

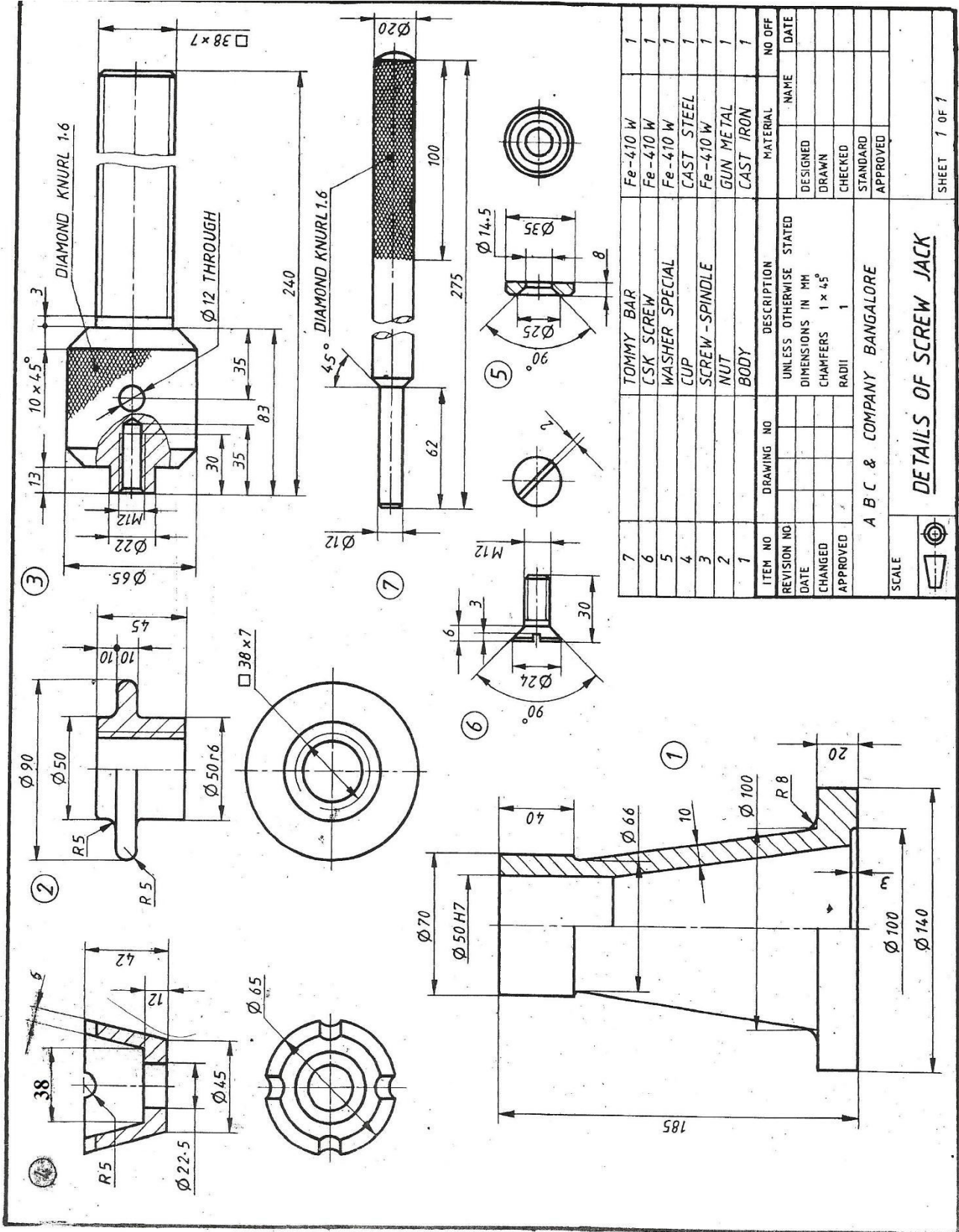


Figure 1: Details of Screw Jack

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Part A

1. Create and assemble a hexagonal headed bolt, nut, and washer, Take diameter of bolt $d = 10\text{mm}$ and length $L = 40\text{mm}$.

20 Marks

Part B

2. Draw the sectional front view and side view of a “**Universal Coupling**” with diameter $d = 30\text{ mm}$.

30 Marks

Part C

3. Figure 1 shows the details of a “**Plummer Block**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

50 Marks

OR

4. Figure 2 shows the details of a “**Connecting Rod**”. Assemble the parts show the following views.
 - a. Half sectional front view.
 - b. Top view

50 Marks

Examiner 1

Examiner 2

Name :

Signature with date :

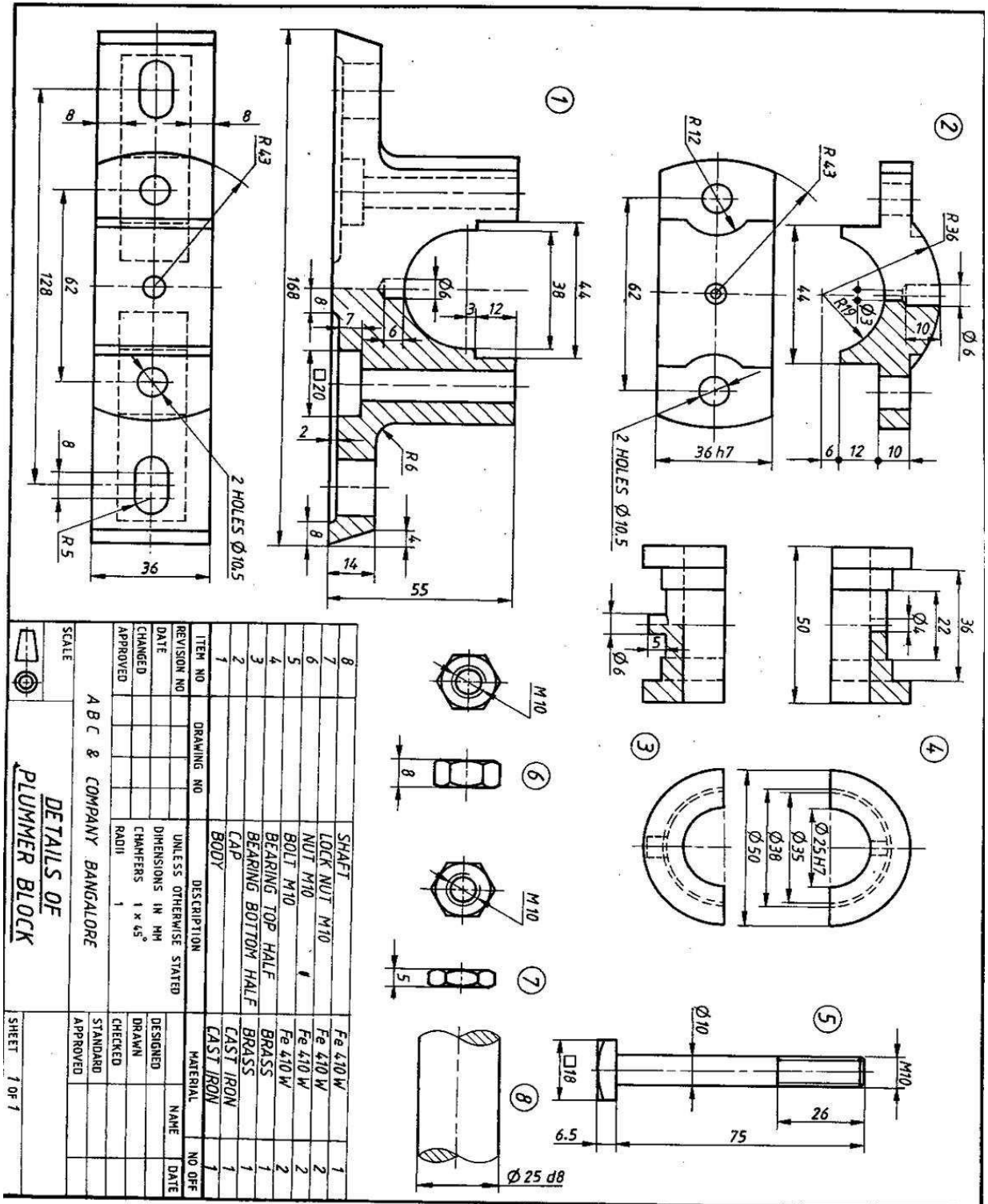


Figure 1 Details of Plummer Block

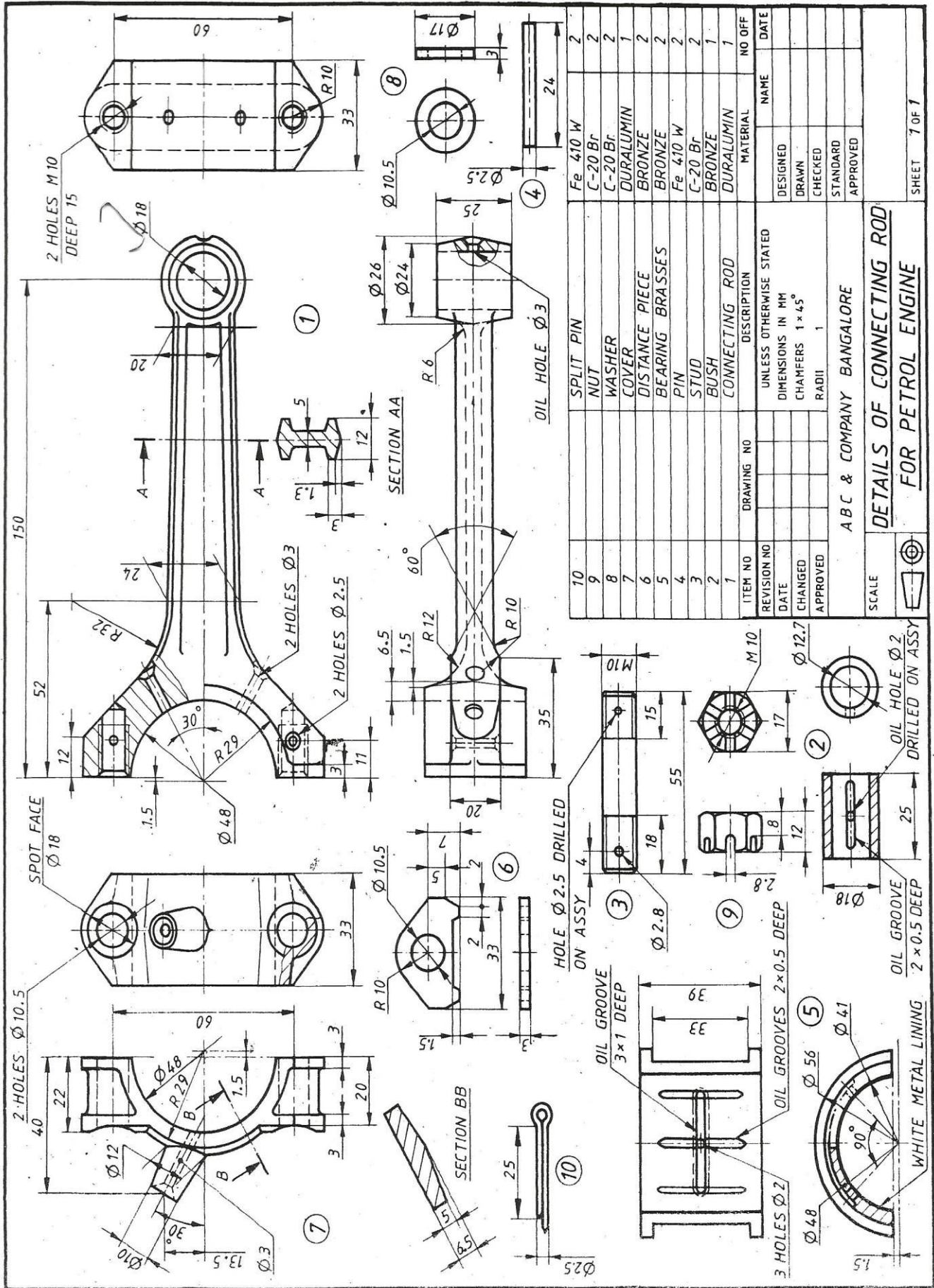


Figure 2 : Details of Connecting Rod