CBCS 22 SCHEME

USN									

BMEL305

Third Semester B.E. Degree Examination, Mar/April 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

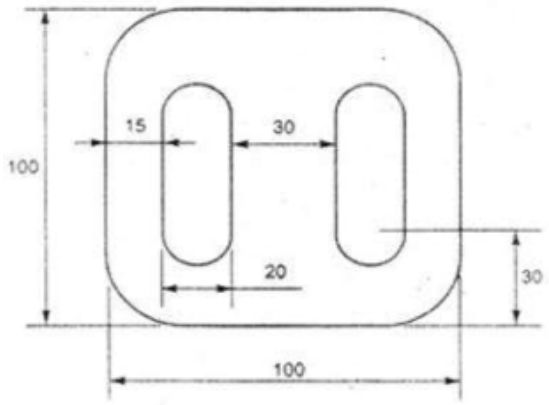

Figure 1

Part B

2. Draw the sectional front view and side view of a "**Flanged Coupling - Unprotected type**" as shown in Figure 2.

30 Marks

Part C

3. 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 :

CBCS 22 SCHEME

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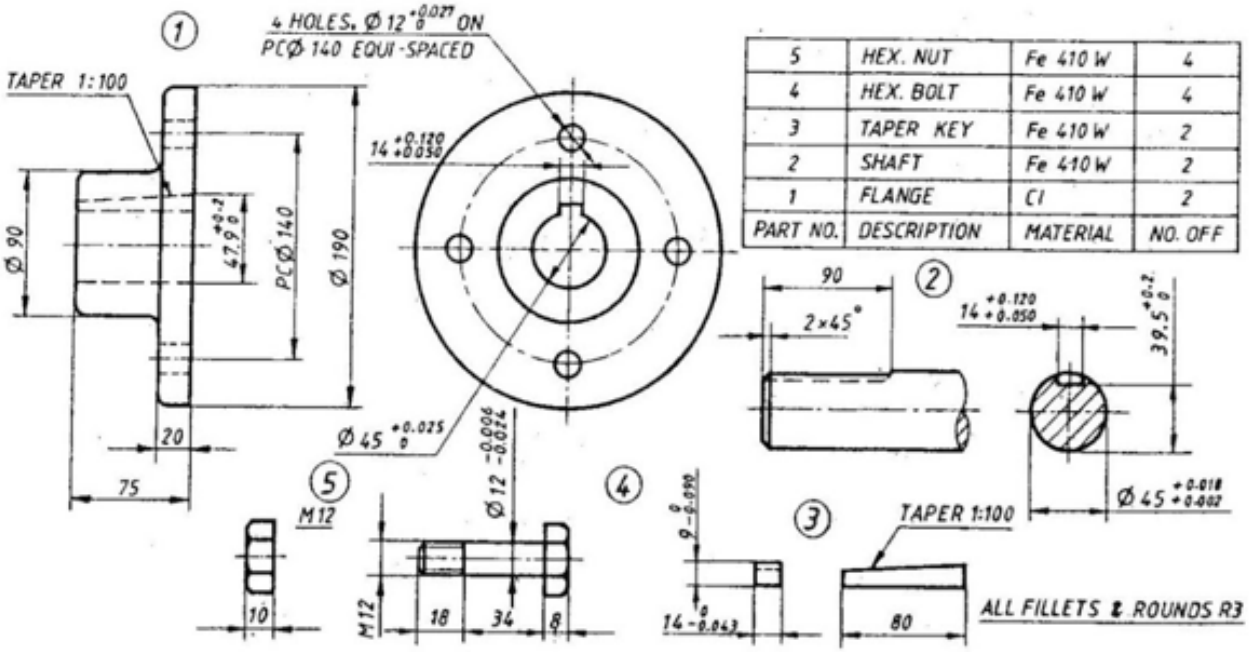
Third Semester B.E. Degree Examination, Mar/April 2024

INTRODUCTION TO MODELLING & DESIGN FOR MANUFACTURING

Time: 3 Hours Max. Marks:100



All Dimensions in mm

Details of Flanged Coupling — Unprotected Type

Figure 2: Details of Flanged Coupling - Unprotected type

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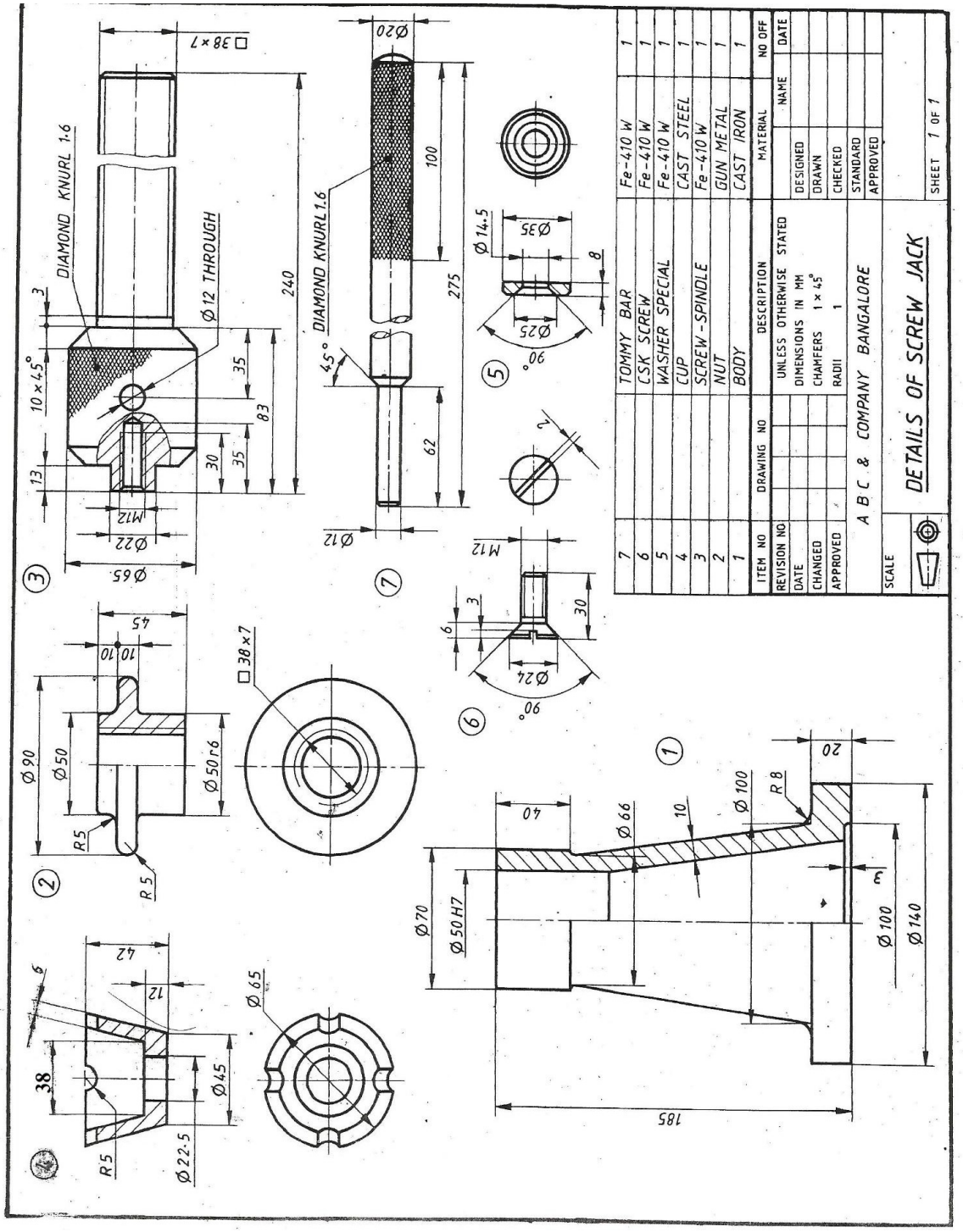

Details of a Screw Jack

Figure 3: Details of Screw Jack

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Part A

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

20 Marks

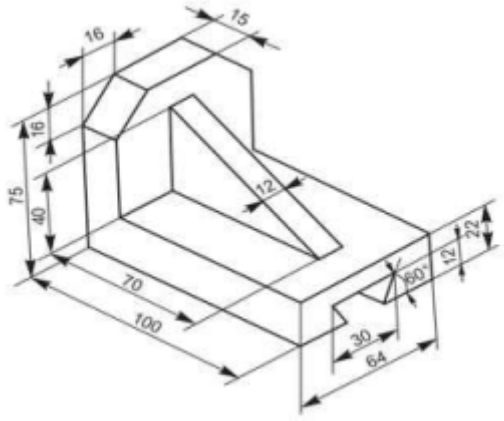

Figure 1

Part B

2. Draw the sectional front and top view of "**Knuckle joint**" as shown in Figure 2.

30 Marks

Part C

3. Figure 3 shows the details of a "**Connecting Rod**". Assemble the parts show the following views.
   a. Half sectional front view.
   b. Top view

50 Marks

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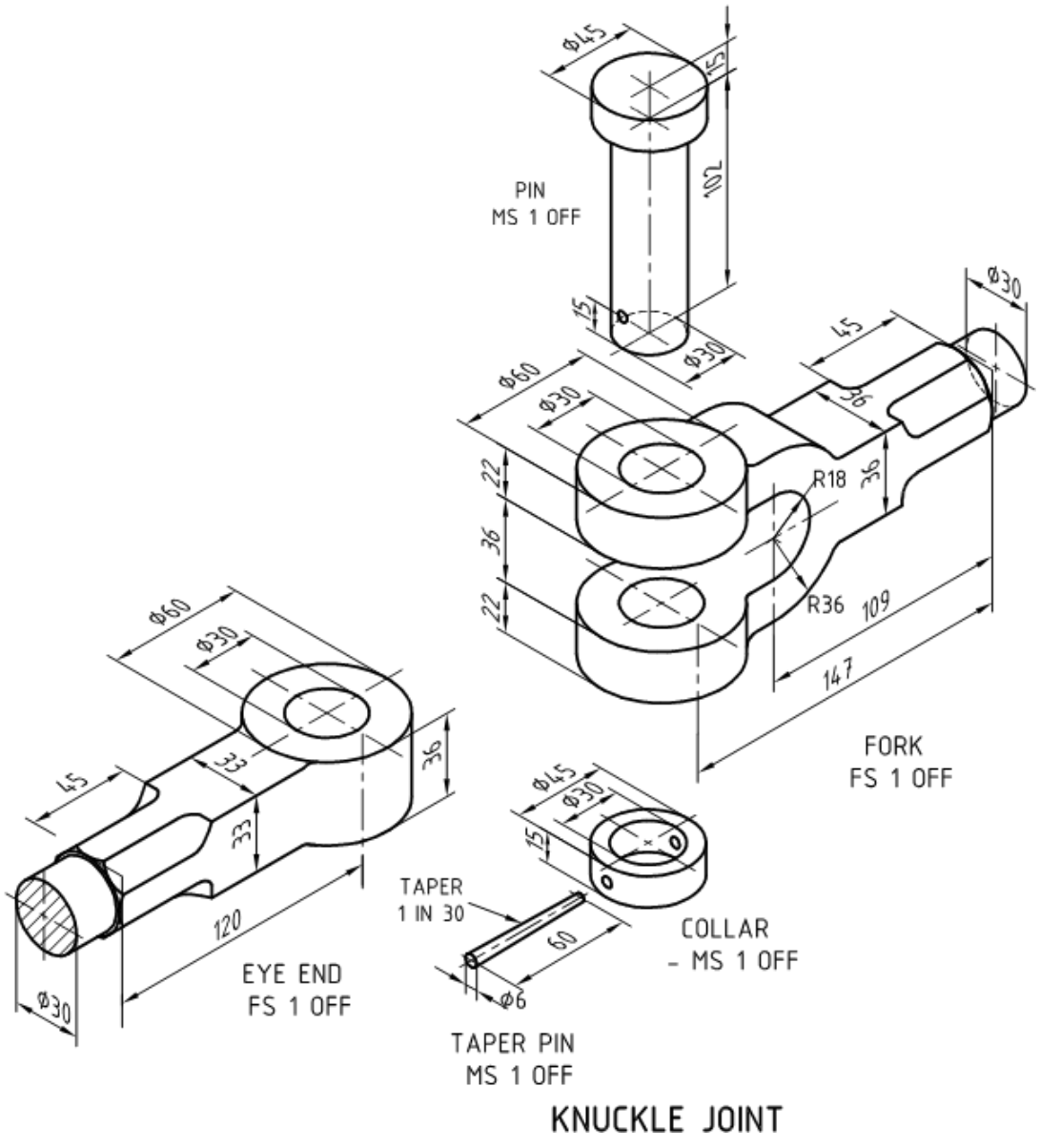

Figure 2: Details of Knuckle joint

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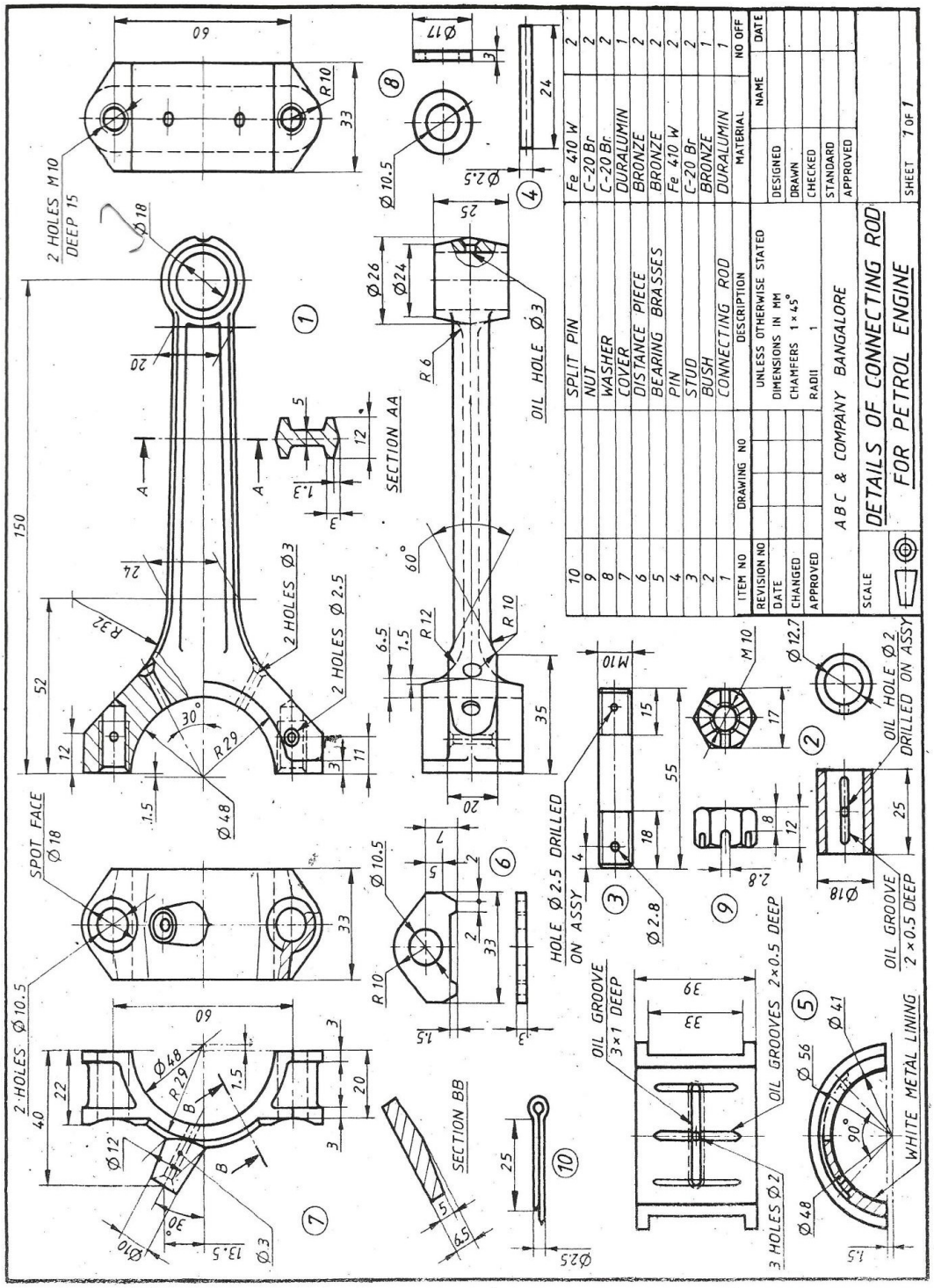

Details of a Petrol Engine Connecting Rod

Figure 3: Details of Connecting Rod

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INTRODUCTION TO MODELLING & DESIGN FOR MANUFACTURING

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

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

20 Marks

Part B

2. Draw the sectional front and top view of "**Cotter joint**" as shown in Figure 1.

30 Marks

Part C

3. Figure 2 shows the details of a "**Machine Vice**". Assemble the parts show the following views.
   a. Half sectional front view.
   b. Top view

50 Marks

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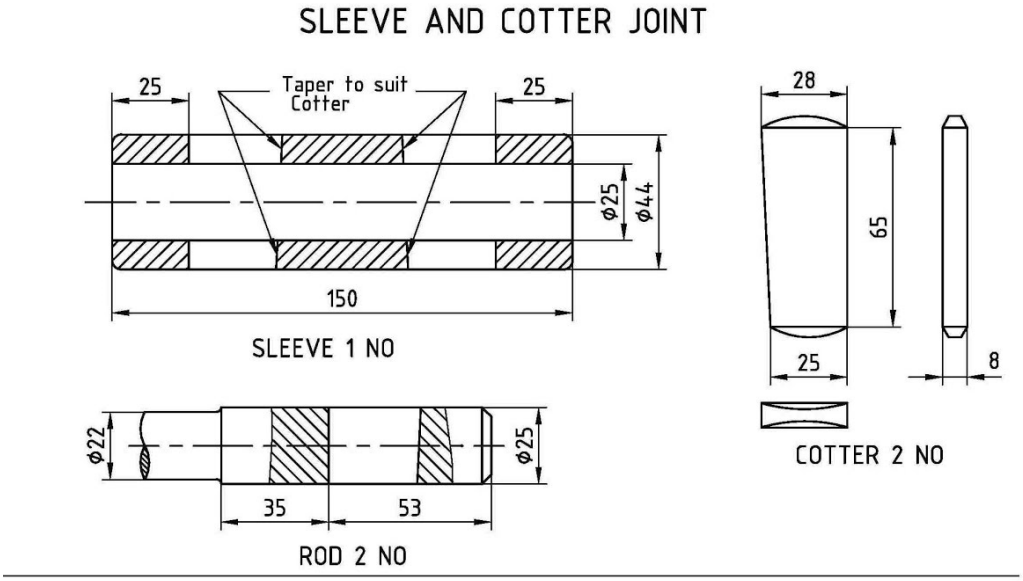

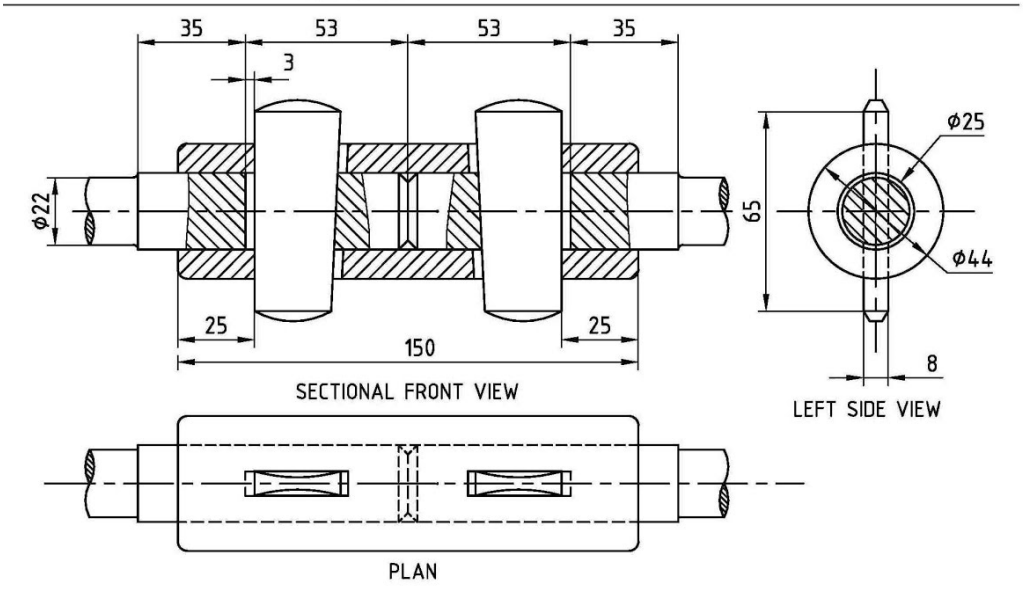

BILL OF MATERIALS

S.No.	PART NAME	MATERIAL	NO.OFF
1.	SLEEVE	MILD STEEL	1
2.	RODS	MILD STEEL	2
3.	COTTER	STEEL	2

Figure 1: Details of Cotter Joint

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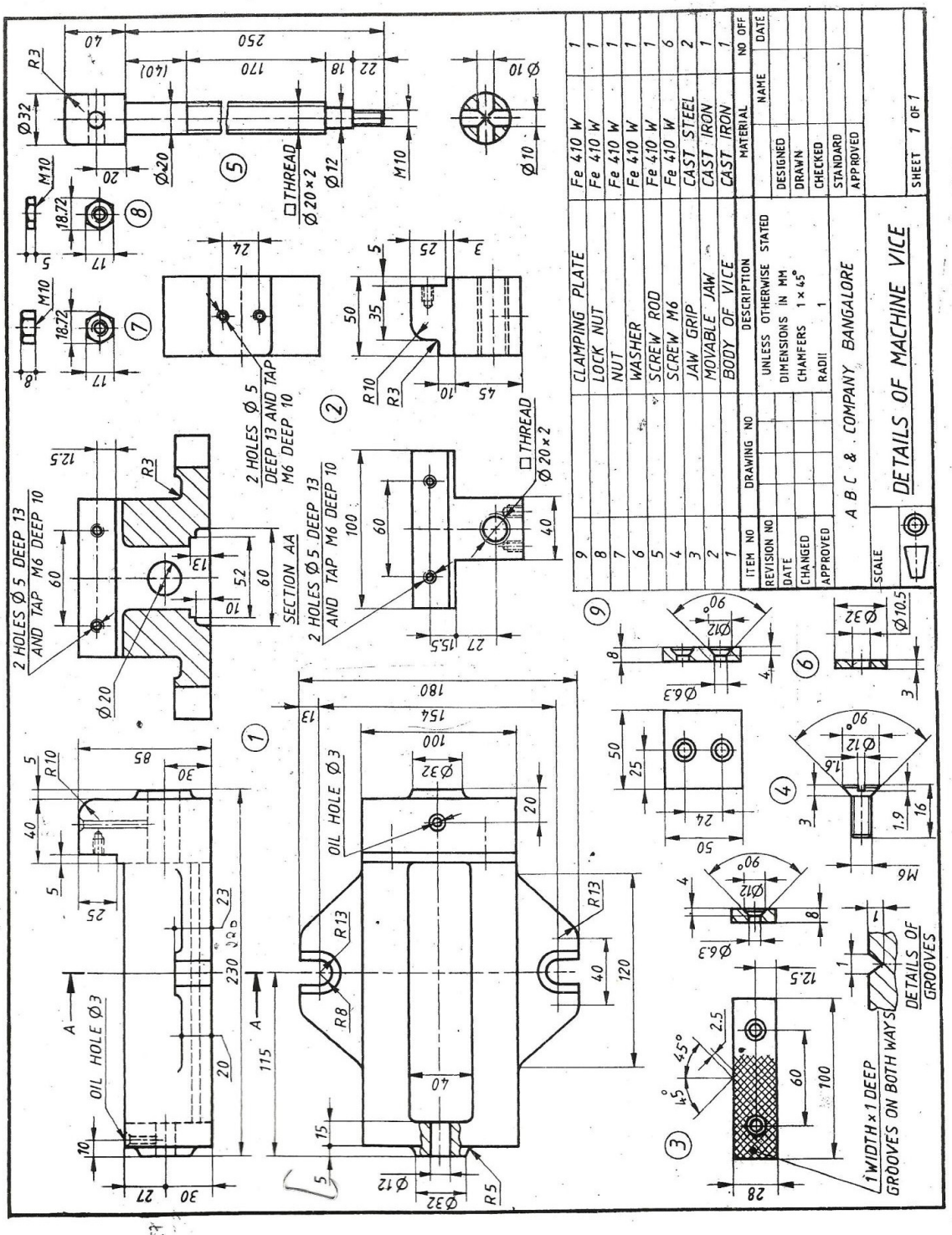

Figure 2: Details of Machine Vice

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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 and assemble a hexagonal headed bolt, nut, and washer, Take diameter of bolt d = 10mm and length L= 40mm.

20 Marks

Part B

2. Draw the sectional front view and side view of a "**Universal Coupling**" as shown in Figure 1.

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

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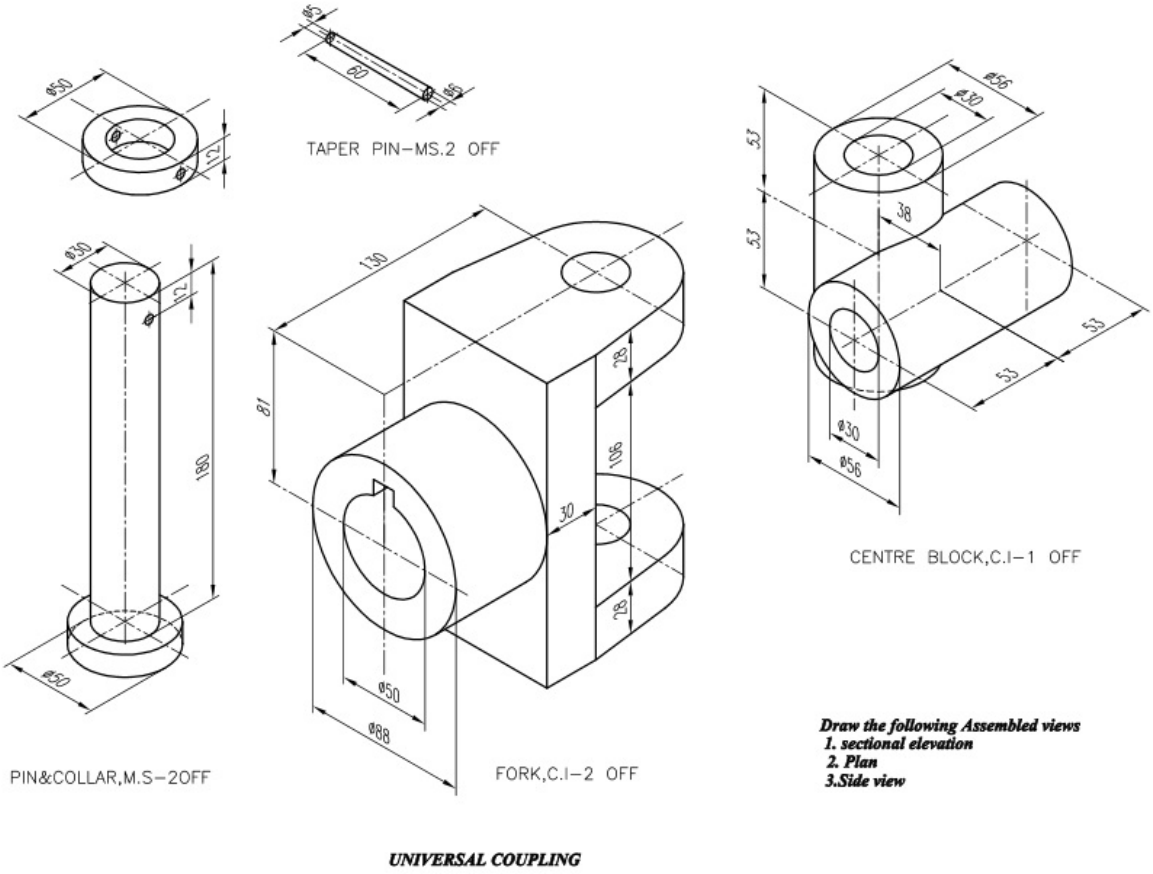

Figure 1: Details of Universal Couplings

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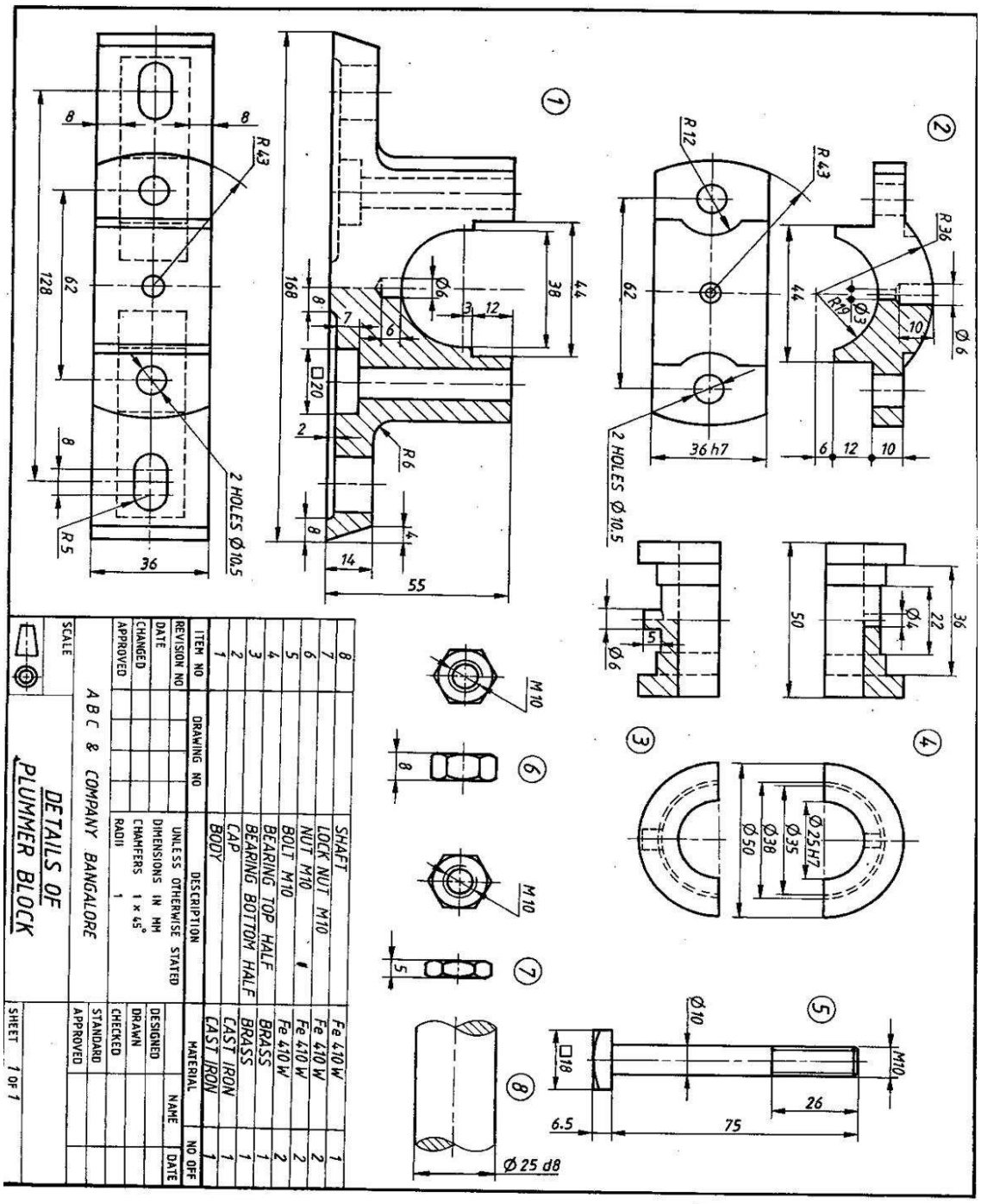

Figure 2: Details of Plummer Block

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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 and assemble a Square headed bolt, nut, and washer, Take diameter of bolt d = 20mm and length L= 60mm.

20 Marks

Part B

1. Draw the sectional front and top view of "**Knuckle joint**" as shown in Figure 1.

30 Marks

Part C

2. Figure 2 shows the details of a "**Rams Bottom Safety Valve**". Assemble the parts show the following views.
   a. Half sectional front view.
   b. Top view

50 Marks

Examiner 1 **Examiner 2**

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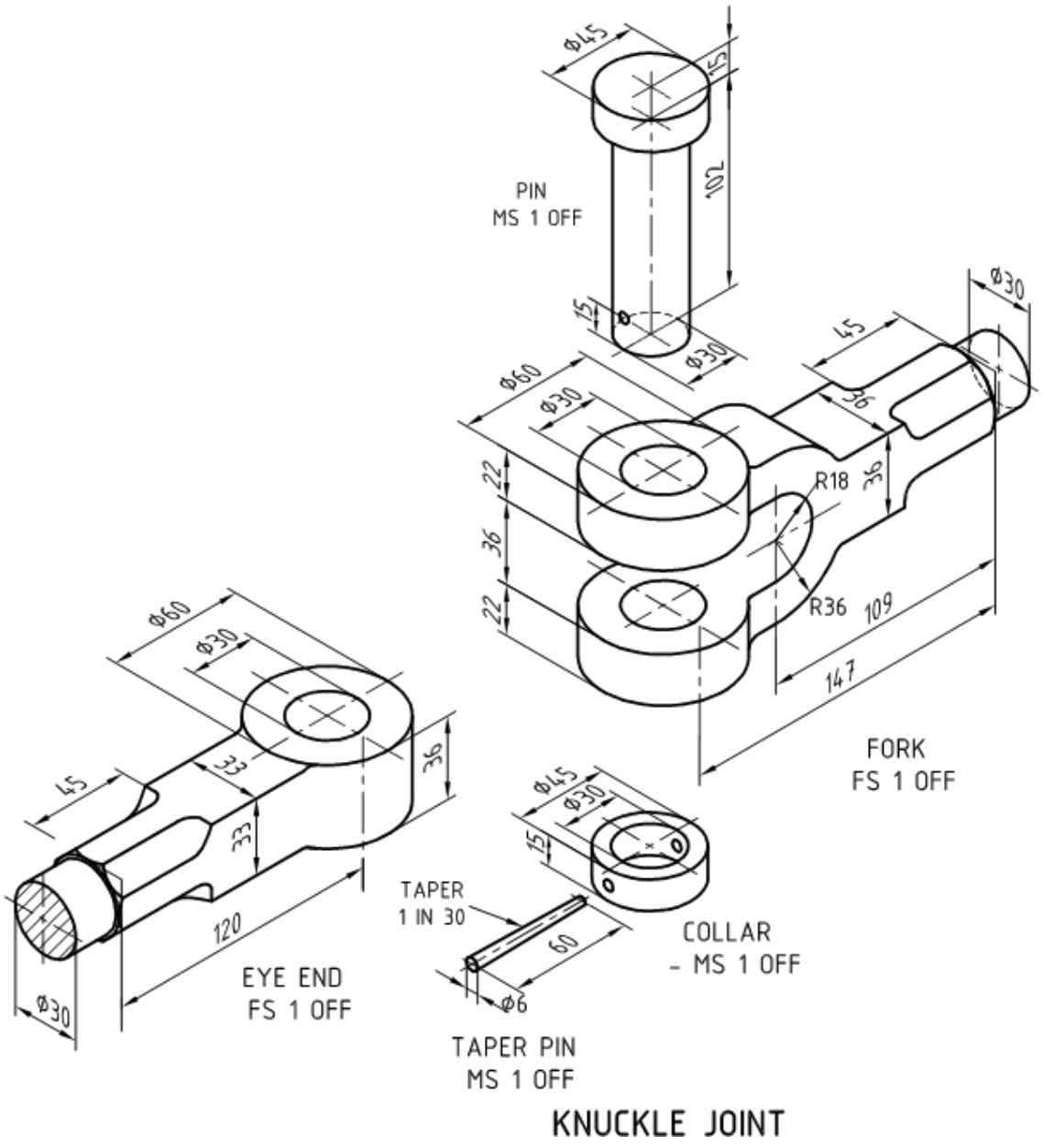

Figure 1: Details of Knuckle Joint

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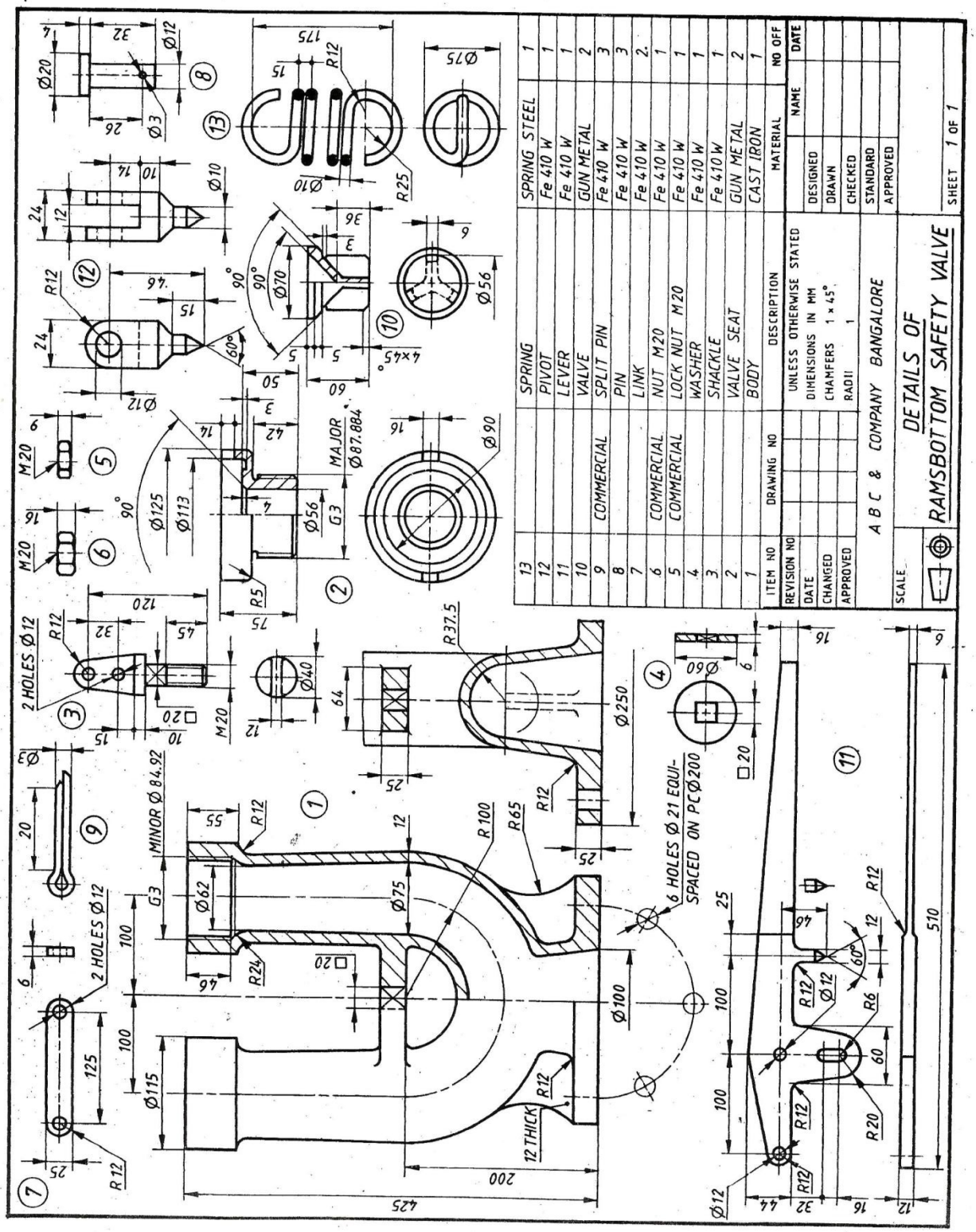

Details of a Ramsbottom Safety Valve

Figure 2: Details of Rams Bottom Safety Valve