Code: 9A03303 1

B.Tech II Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

MACHINE DRAWING

(Mechatronics)

Time: 4 hours Max. Marks: 70

All answers should be on drawing sheet only.
First angle projection is to be adopted.
Answers on the drawing sheet only will be valued.

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Section - I
(Answer any two questions, 2 X 4 = 8 M)

1. Sketch the conventional representation of any four materials.

2. Prepare a specimen title block for use in class room by engineering students.

3. Sketch the following thread profiles
   (a) Buttress.
   (b) Square thread.

Section – II
(Answer any two questions, 2 x 10 = 20 M)

4. Draw the sectional front view and top view of a Knuckle joint.

5. Draw the top view and sectional front view of a single riveted lap joint. Take diameter of rivet = 25 mm.

6. Draw the sectional front view and left side view of muff coupling with diameter of the shaft as 30 mm.

Section – III
(Compulsory question, 1 x 42 = 42 M)

7. Draw the following views of assembled view of a screw jack given in the figure (1)
   (a) Half sectional front view.
   (b) Top view.
   (c) Side view.

Contd. in page 2

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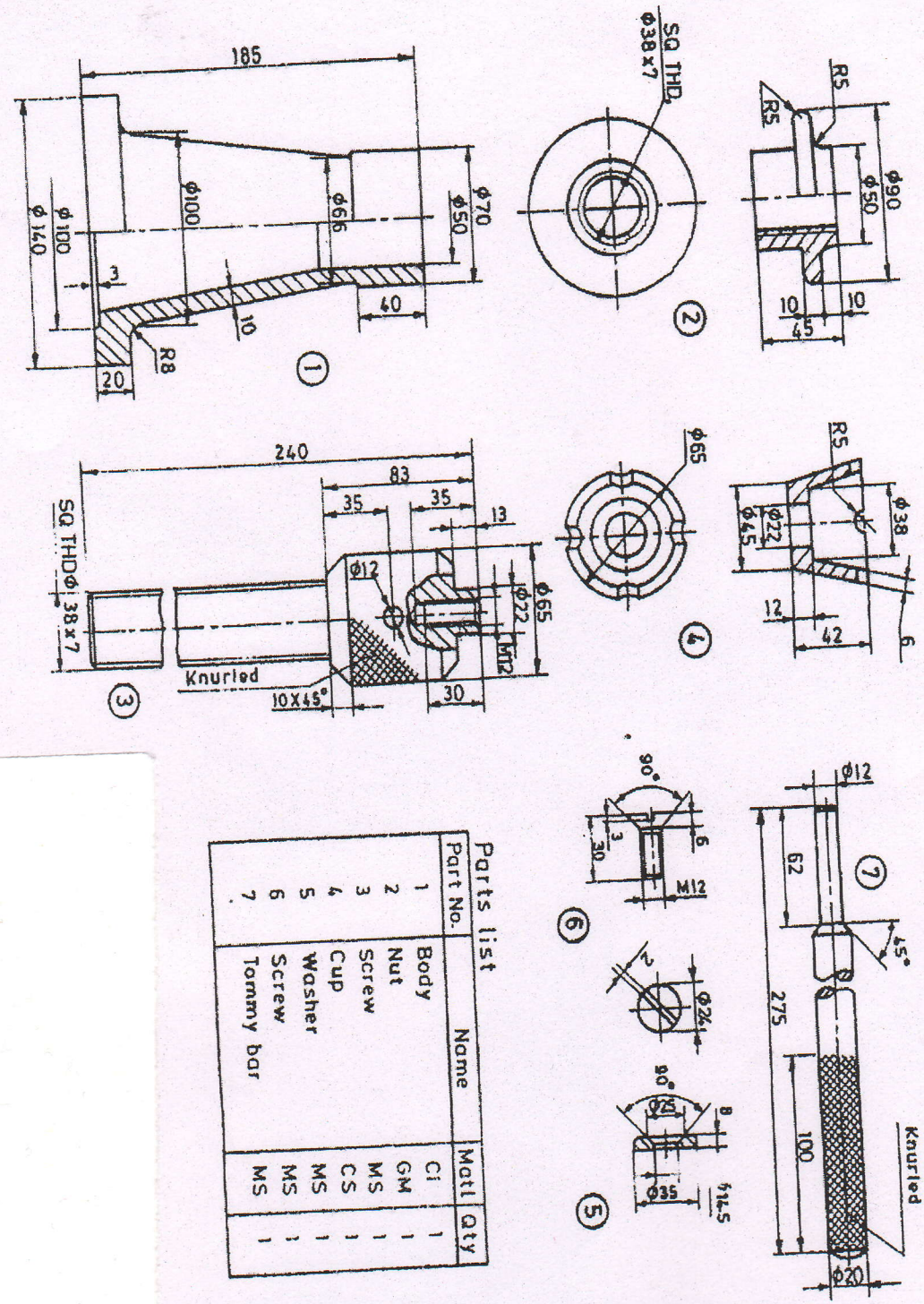

Parts list

Part No.	Name	Matl	Qty
1	Body	Ci	1
2	Nut	GM	1
3	Screw	MS	1
4	Cup	CS	1
5	Washer	MS	1
6	Screw	MS	1
7	Tommy bar	MS	1

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Section - I
(Answer any two questions, 2 X 4 = 8 M)

1. Sketch the ACME thread profile.

2. Sketch the convectional representation of the following:
   (a) External threads.
   (b) Internal threads.

3. Draw the top view of a double riveted double strap zip zag butt joint. Take the thickness of main plates = 10 mm. Assuming pitch of rivets as three times the rivet diameter.

Section – II
(Answer any two questions, 2 x 10 = 20 M)

4. Draw half sectional front view and side view of coupler nut. Take the diameter of bolt as 25 mm.

5. Draw the isometric V-thread sectional view of pitch 30 mm shouring at least three threads. Indicate all the standard proportions in the drawing. Draw both the external and internal thread forms separately.

6. Draw the sectional elevation, side view and top view right half in section of a solid journal bearing for a 30 mm diameter shaft.

Section – III
(Compulsory question, 1 x 42 = 42 M)

7. Draw the following views at assembly of eccentric mechanism as shown in figure 1.
   (a) Half sectional front view.
   (b) Side view from left.

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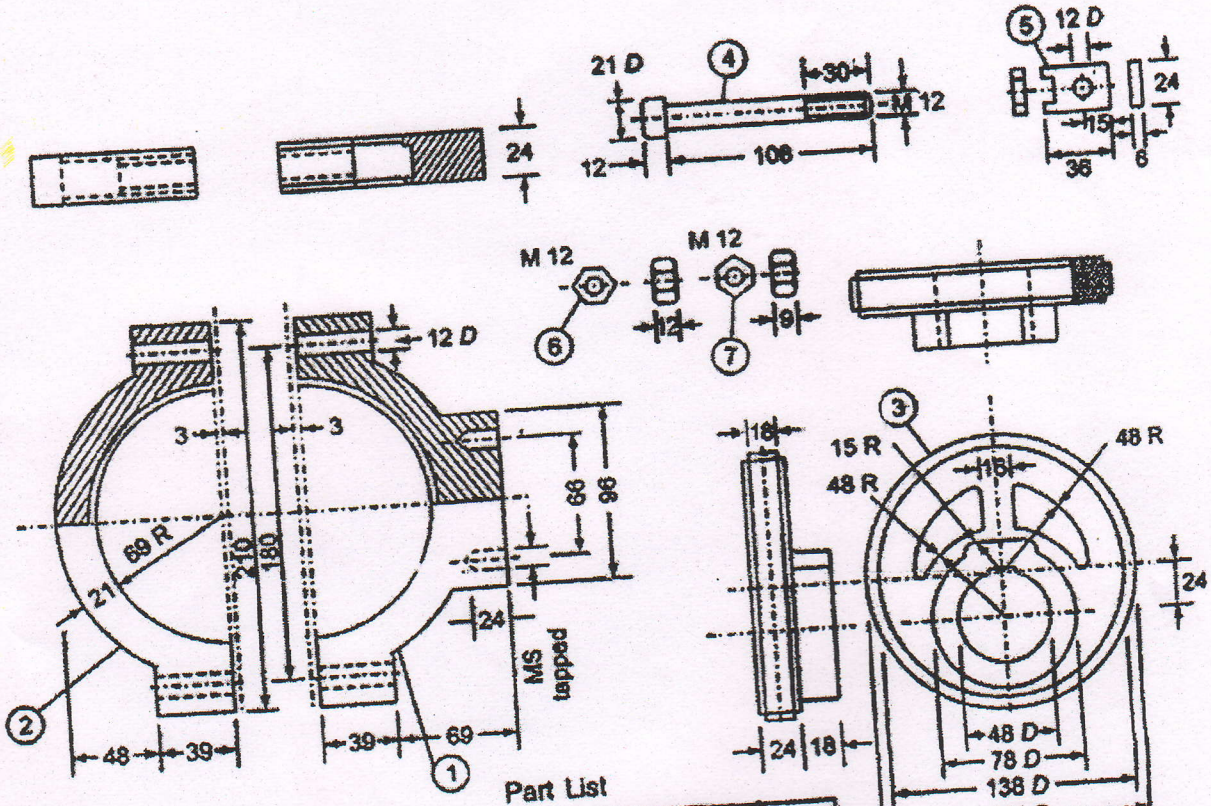

Part List

S.no.	Part name	Material	No. off
1.	Eccentric strap	C.I.	1
2.	Do	Do	1
3.	Sheave	C.I.	1
4.	Strap bolt	M.S.	2
5.	Packing strip	Brass	2
6.	Nut	M.S.	2
7.	Nut	M.S.	2

Eccentric (Details)

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(Mechatronics)

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Section - I
(Answer any two questions, 2 X 4 = 8 M)

1. Explain with the help of sketch.
   (a) Chain dimensioning.
   (b) Parallel dimensioning.

2. Sketch the two view of an eye bolt assume diameter = 25 mm.

3. Sketch the conventional representation of
   (a) Straight Knurling.
   (b) Splined shaft.

Section – II
(Answer any two questions, 2 x 10 = 20 M)

4. Draw the sectional front view and top view of double riveted, double strap, zig zag butt joint to join plates of thickness 12 mm each.

5. Sketch full sectional elevation and plan view of a bush type foot step bearing assembly suitable to a shaft size 50 mm in diameter.

6. Draw elevation top half in section and sectional view of a split muff coupling of four bolt types fitted on a shaft of 40 mm diameter. Use standard proportions for the coupling and dimension the views.

Section – III
(Compulsory question, 1 x 42 = 42 M)

7. Draw the following views of assembly of pipe vice in figure 1
   (a) Sectional front view.
   (b) Top view.

Contd. in page 2

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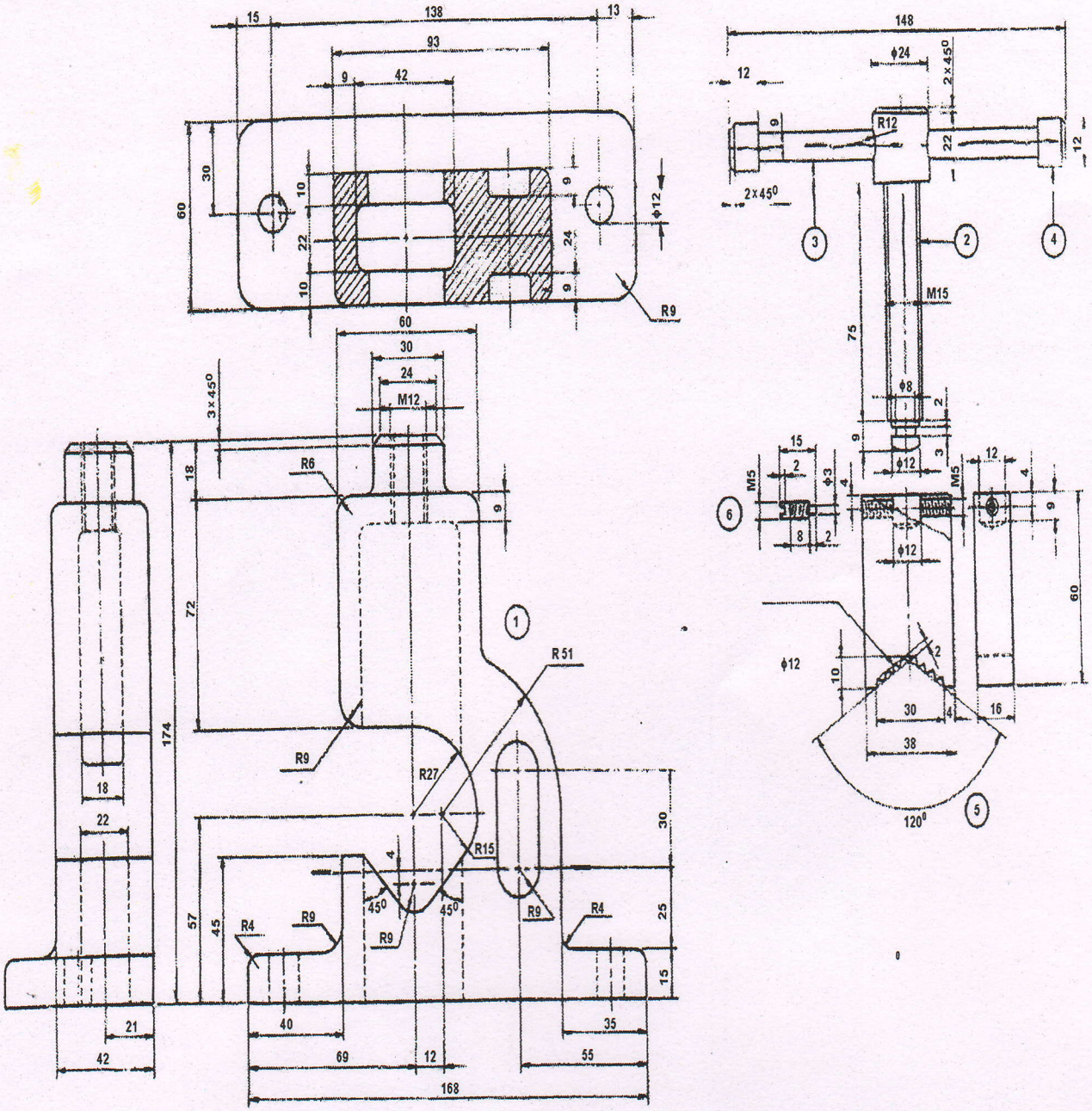

Part List

Part No.	Name	Material	Quantity
1	Housing	C.I.	1
2	Handle screw	M.S.	1
3	Handle bar	M.S.	1
4	Handle bar bush	M.S.	1
5	Jaw	M.S.	1
6	Set screw	M.S.	2

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(Mechatronics)

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*****

Section - I
(Answer any two questions, 2 X 4 = 8 M)

1. Sketch the method of dimensioning counter sinks.

2. Draw the top view, front view and right side view of a hexagonal nut for a bolt of 24 mm diameter.

3. Sketch the conventional representation of spur gear and worm gear.

Section – II
(Answer any two questions, 2 x 10 = 20 M)

4. Draw the sectional front view and top view of a Knucke joint.

5. Draw elevation top half in section and end view front right of a rigid type protected flanged coupling of four bolts. The shaft diameter is 32 mm. Use standard proportions for the coupling and dimension the views.

6. Sketch elevation and plan bottom half in section views of a bushed journal bearing for a shaft of 40 mm diameter.

Section – III
(Compulsory question, 1 x 42 = 42 M)

7. Draw the sectional view (left half in section) and right side view of the assembled stuffing box from the given figure and part list as shown in figure 1.

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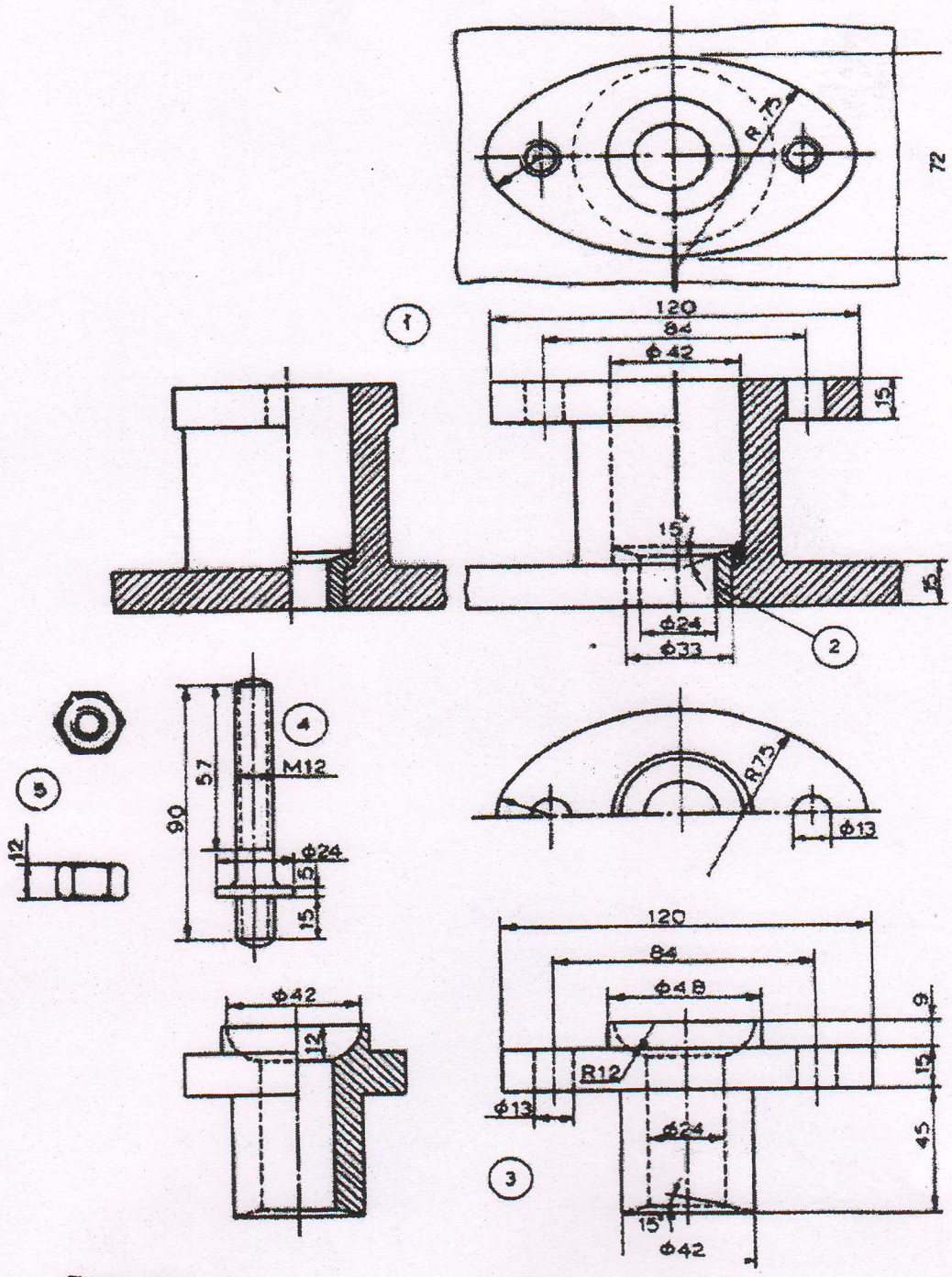

Part List

Part No.	*Name*	*Material*	*Quantity*
1	Body	C.I.	1
2	Bush	Brass	1
3	Gland	Brass	1
4	Stud	M.S.	2
5	Nut	M.S.	2

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