Government College of Engineering, Amravati

(An Autonomous Institute of Government of Maharashtra)

Forth Semester B. Tech. (Mechanical Engineering)

Summer – 2018

Course Code: MEU405

Course Name: Machine Drawing

Time: 2 hr.30min. **Max. Marks: 30**

Instructions to Candidate

1) All questions are compulsory.
2) Assume suitable data wherever necessary and clearly state the assumptions made.
3) Diagrams/sketches should be given wherever necessary.
4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5) Figures to the right indicate full marks.

1 Solve *any TWO* questions

a Pictorial view of an object as shown in figure 1(a) **06**
Front view to be as seen in direction of arrow X.
Draw

i. Sectional front view
ii. Side view from left
iii. Top view

Contd..

Solve ***EACH*** questions

a Draw a semicircle of 70 mm radius. Inscribe a regular pentagon of 40 mm side symmetrically in the semicircle with a corner of it on the center of the semicircle and the side opposite to the said corner parallel to the diameter of the semicircle. The semicircle is the development of a cone and the pentagon is a figure drawn on its curved surface. Show it on the FV and TV of the cone **03**

b A cone of base diameter 40 mm and slant height 60 mm is kept on the ground on its base. An AIP inclined at 45^0 to the HP cut the cone through the midpoint of the axis. Draw the development. **03**

Solve *any **TWO*** questions

a A cylinder of 60 mm diameter and 70 mm length stands on its base. A horizontal square hole of 30 mm side is cut through the cylinder. The axis of the hole is parallel to the VP and bisects the axis of the cylinder. Draw the projection of the cylinder showing the curve of intersection with the side face of the hole inclined at 30^0 to the HP **03**

b A square prism with base 50 mm and axis 90 m is resting on its base with an edge of base inclined at 30^0 to the VP. It is completely penetrated by a horizontal cylinder of diameter 50 mm and length 90 mm axes of both the solids are parallel to the VP and bisect each other. Draw the projections showing the curve of intersection. **03**

Contd..

c A cone of base diameter 60 mm and length of the axis 70 mm is resting on its base. It is completely penetrated by a horizontal cylinder of 80 mm length that has its axis parallel to VP and intersecting the axis of the cone 25 mm above the base. Draw the projection of the solid showing curves of intersection if the size of the cylinder is such that projection in the side view is a circle touching the generator of the cone that represents true lengths **03**

4 Solve

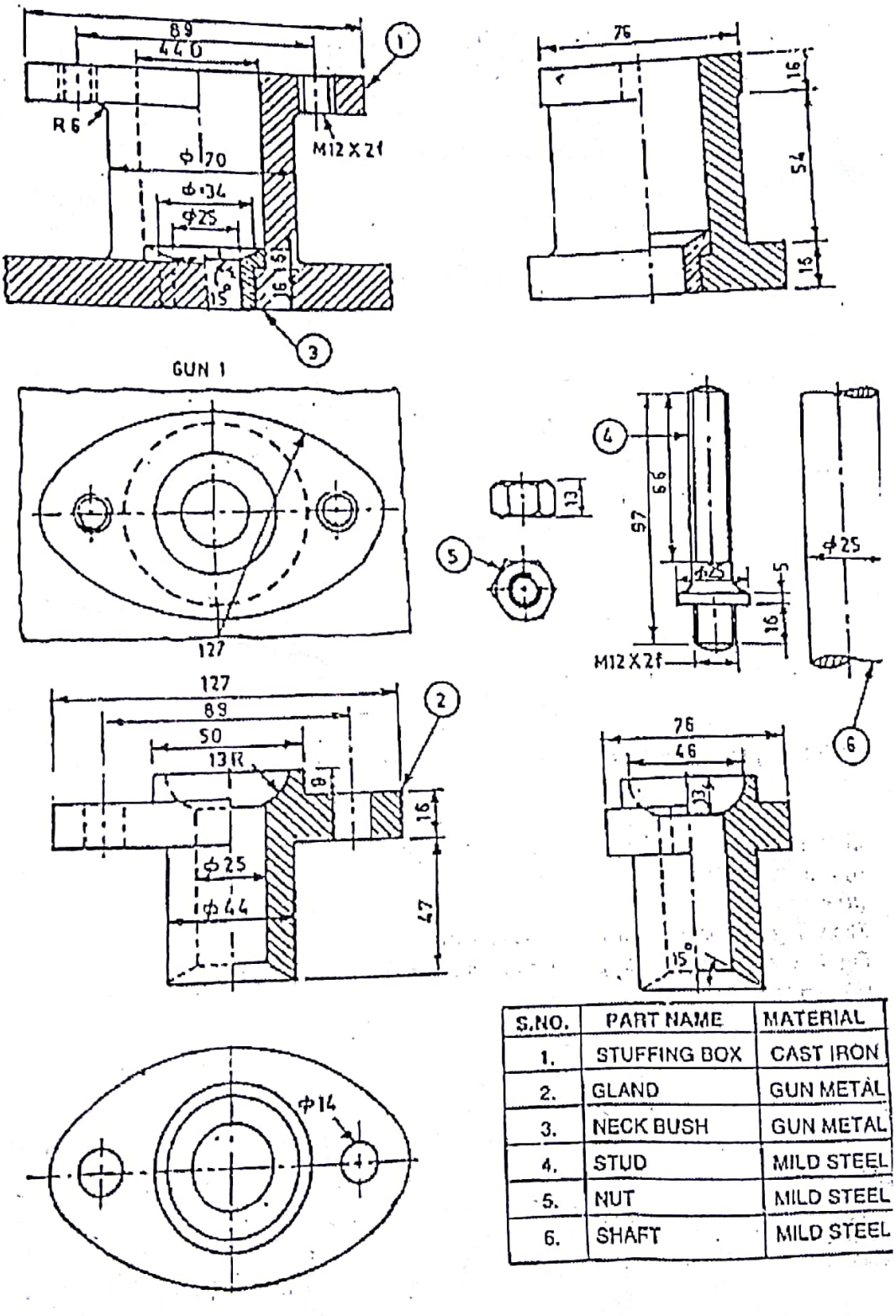
a With suitable examples explain the following transformations in Catia software: **06**

i. Moving an object
ii. Scaling an object
iii. Rotation an object
iv. Mirroring an object

Contd..

5 Solve ***EACH*** questions **6**

a Figure 5(a) shows detailed drawings of a stuffing box. Draw its: i. Front view left half in section
ii. Top view



S.NO.	PART NAME	MATERIAL
1.	STUFFING BOX	CAST IRON
2.	GLAND	GUN METAL
3.	NECK BUSH	GUN METAL
4.	STUD	MILD STEEL
5.	NUT	MILD STEEL
6.	SHAFT	MILD STEEL

Government College of Engineering, Amravati

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Fourth Semester B. Tech. (Mechanical Engg.)

Summer– 2017

Course Code: MEU405

Course Name: MACHINE DRAWING

Time: 2 Hrs. 30 Min. **Max. Marks: 30**

Instructions to Candidate

1) All questions are compulsory.
2) Assume suitable data wherever necessary and clearly state the assumptions made.
3) Diagrams/sketches should be given wherever necessary.
4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5) Figures to the right indicate full marks.

1. a) Draw 3 different views of the object shown pictorially in fig. 1. Also draw one sectional view along the section which divides the object in two equal pieces. **9**

OR

b) Draw 3 different views of the object shown pictorially in fig. 2. Also draw one sectional view along the section which divides the object in two equal pieces. **9**

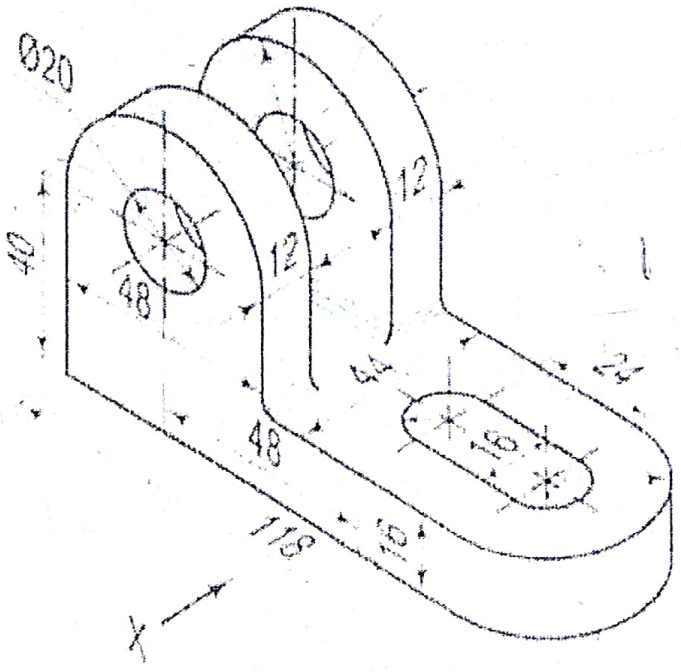
2. A frustum of square pyramid has its base 50 mm side, top 25 mm side and height 75 mm. Draw the development of its lateral surface. Also draw the projections of the frustum showing **6**

Contd..

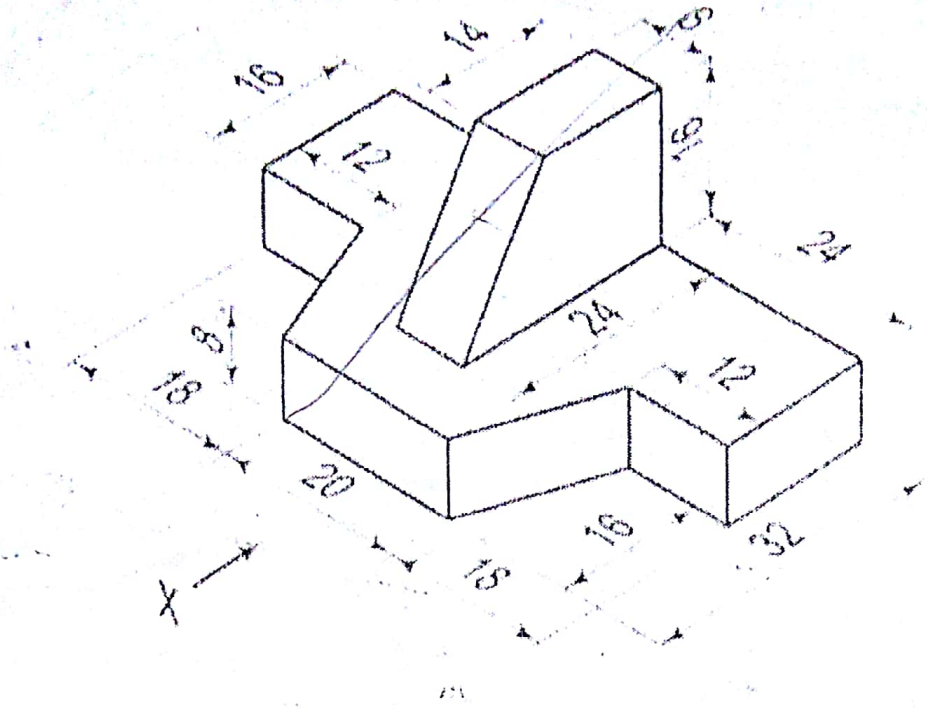
the line joining the mid-point of a top edge of one face with the mid-point of the bottom edge of the opposite face by the shortest distance when its axis is vertical and a side of its base is parallel to the V.P.

3. A vertical cone, base 80 mm diameter, axis 100 mm long is penetrated by a horizontal cylinder of 40 mm diameter, the axis of which is 25 mm above the base of the cone, parallel to V. P. and 6 mm away from the axis of cone. Draw the projections, showing curves of intersection. 6

4. Draw the detailed assembly drawing of stuffing box. 9



Q.1. Fig. 1.



Q.1. Fig. 2.

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Government College of Engineering, Amravati

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Fourth Semester B. Tech. (Mechanical Engineering)

Summer – 2016

Course Code: MEU405

Course Name: Machine Drawing

Time: 2 Hrs. 30 Min. **Max. Marks: 30**

Instructions to Candidate

1) All questions are compulsory.
2) Assume suitable data wherever necessary and clearly state the assumptions made.
3) Diagrams/sketches should be given wherever necessary.
4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5) Figures to the right indicate full marks.

1	a)	Draw 3 different views with one sectional view of a figure – 1	9
		OR	
	b)	Draw 3 different views with one sectional view of a figure – 2	9
2		A frustum of a horizontal pyramid is standing on its larger base on the ground with a side of the base parallel to VP. The side of base is 35mm and of the top is 20mm. The axis of frustum is 60mm long. An end of a thread is attached to one of the corners of the base and thread is wound on lateral surface, following shortest path so that it will pass	6

though opposite corner of the top and then brought back to the same corner of the base. Determine shortest length of the thread required and show the path followed by thread in FV & TV.

3 A horizontal triangular prism with side of the base 50mm with top rectangular face inclined at 45 degrees with HP, penetrates a vertical triangular prism with side of base 50mm, having a face parallel to VP. The axis of horizontal prism is 15 mm in front of that of the vertical prism. Draw projections of the two prisms showing lines of intersection 6

4 Draw detailed assembly drawing of a cross head 9

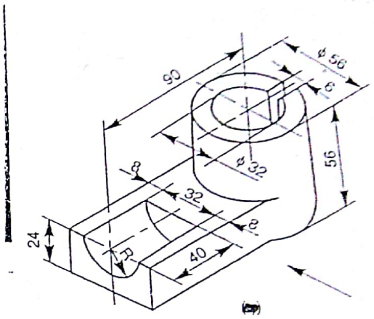

Figure-1

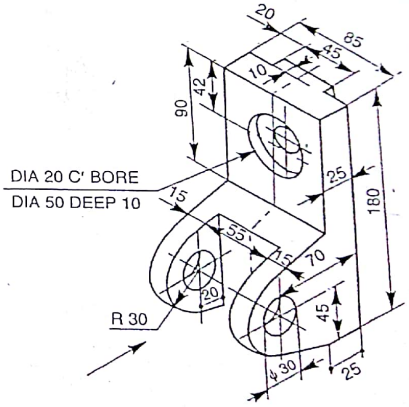

Figure-2

Government College of Engineering, Amravati
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Fourth Semester B. Tech. (Mechanical Engineering)

Summer – 2014

Course Code: MEU405

Course Name: Machine Drawing

Time: 2 Hrs. 30 Min. **Max. Marks: 30**

Instructions to Candidate

1) All questions are compulsory.
2) Assume suitable data wherever necessary and clearly state the assumptions made.
3) Diagrams/sketches should be given wherever necessary.
4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5) Figures to the right indicate full marks.

1.	Figure Q.1 shows pictorial view of a block. Draw the following views : sectional front view , half sectional side view , and top view	**9**
2.	A cone of diameter of base 50 mm and axis 60 mm long is resting on its base on HP. Draw projections of cone and show on it the shortest path traced by a point starting from a point on the circumference of base of cone , moving around it and reaching the same point.	**6**
3.	A vertical cone with diameter of base 90 mm and axis 100 mm long is penetrated by a cylinder of 60 mm diameter , the axis of which is parallel to	**6**

Contd..

and 10 mm away from that of the cone. Draw the projections showing lines of intersection when plane containing the two axes is [1] parallel to VP [2] inclined at 45 degrees to VP

4 Draw the exploded views of assembly of all parts of a Rams bottom safety valve **9**

OR

Draw the exploded views of assembly of all parts of a C - clamp. **9**

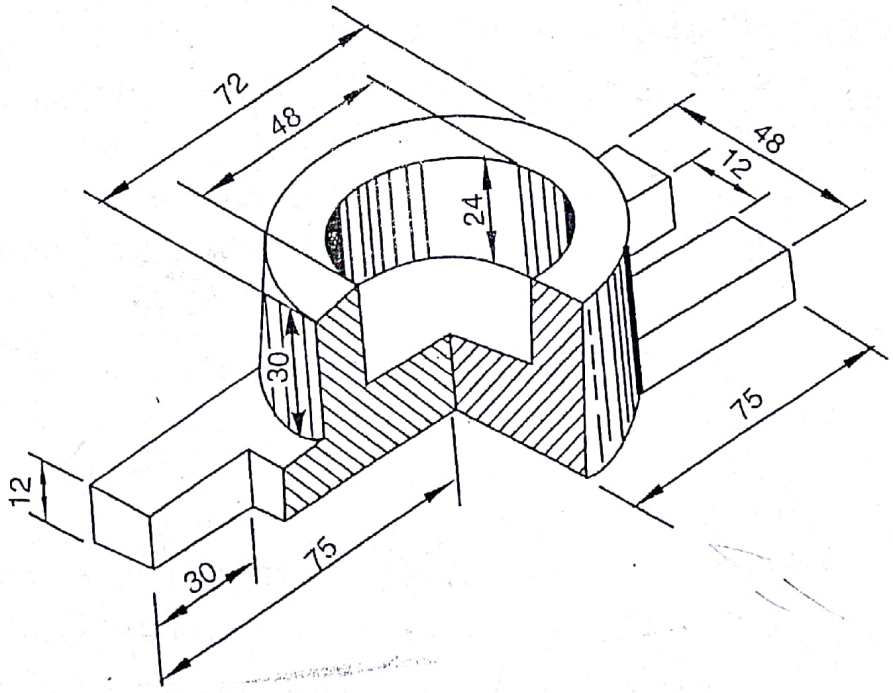


Fig. Q.1

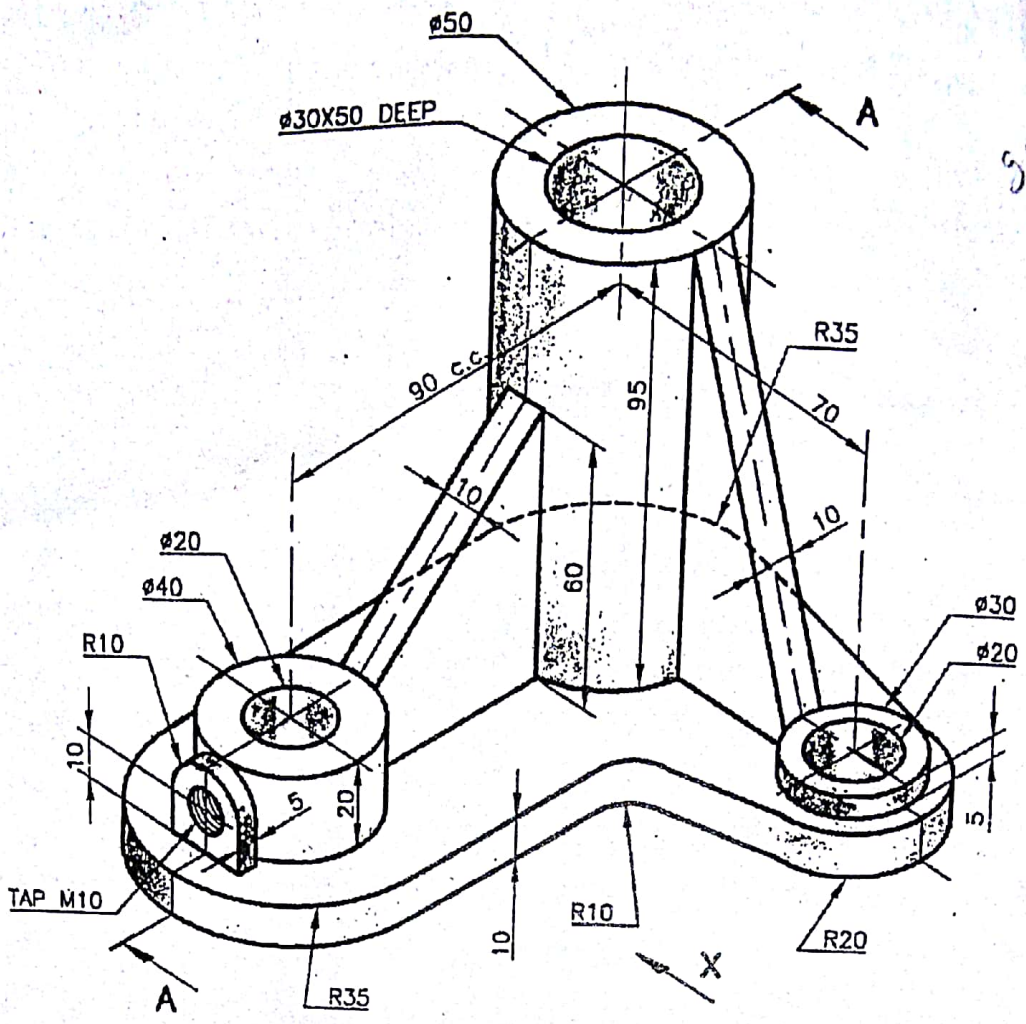
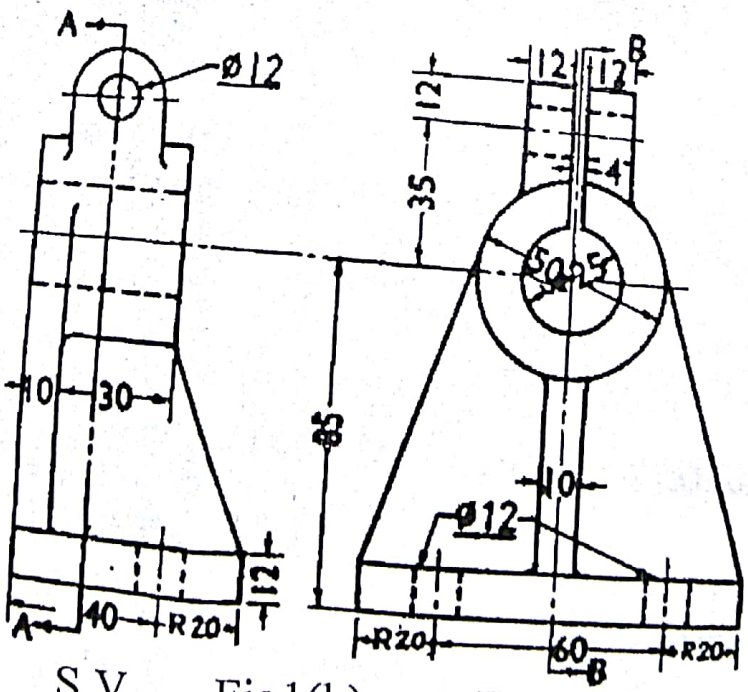


Fig 1(a)

b Figure 1(b). Draw by first angle of method of projection i) Sectional front view, section A-A ii) Sectional Side view, section B-B iii) Top view **06**



S.V. Fig1(b) F.V.