

BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
Comprehensive Examination
TAUC111 – Engineering Graphics

2A

Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (2 x 5 = 10)

1. A ladder is resting between the ground and vertical wall. The ladder is inclined to _____ . The true length of the ladder can be seen in its _____ .
2. The sectional view of a cone cut by a cutting plane inclined to the axis is _____ , while the section view is a parabola when the cutting plane is _____ to its generator.
3. The front and top view of a cylinder is rectangle, the side view is _____ .
4. The projections of a point lie below the XY line. The point lies in the _____ .
5. Draw the free hand sketch of the given figure.

Part B (2 x 6 = 12)

1. An isosceles triangle (ABC) of base edge (AB) 40 mm and height 60 mm is resting on HP on one of the corner which is opposite to the shorter edge. The shorter edge is 45° inclined to VP and parallel to HP. The surface makes an inclination of 35° with HP.

(OR)

1. A line AB, 80 mm long is inclined at 30° to the HP. Its end A is 10 mm above the HP and 22 mm in front of VP. The elevation of line measures 66 mm. Draw the projections of AB and determine its inclination with the HP.
2. Draw the projections of intersection between two cylinders using the following details
 - a. Cylinder with diameter 70mm with axis parallel to HP and VP and Cylinder with diameter 70mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

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PART C

1. A Cone of base diameter 60 mm and axis 70mm long rests on its base on the ground. It is cut by a section plane inclined at 30° to the H.P and perpendicular to VP. The cutting plane bisects the axis of the cone. Using first angle projection.

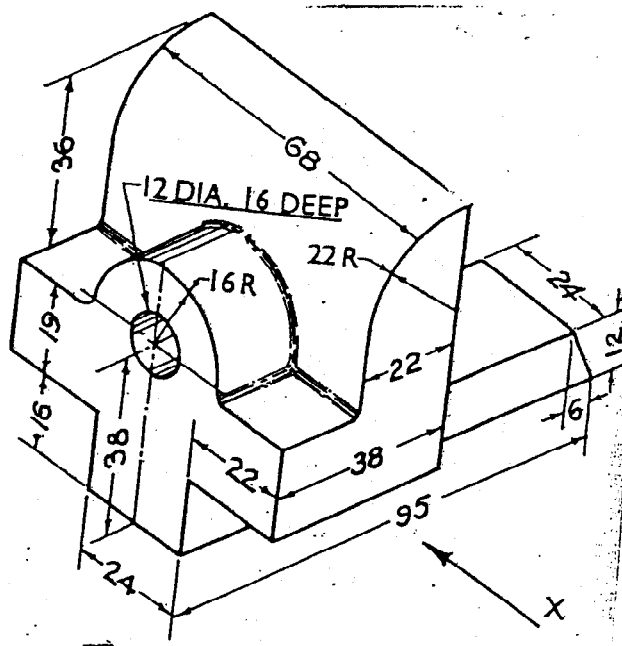
Draw the projections of the Solid. (5)

Show the cutting plane & draw the sectional view. (5)

Draw the development of the lateral surfaces of the truncated solid. (1.5)

Name all the points with proper notations. (1.5)

Figure. 1, for free hand sketch



2B

BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
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Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (5 X 2 = 10)

1. The front view of a line is a point, then in the top view, the line is seen in _____ length, and the line has only _____.
2. The sectional view of a cone cut by a cutting plane parallel to its base is _____, while the section view is a hyperbola when the cutting plane is _____ to its axis.
3. Tetrahedral is an object which has _____ sides, while Octahedral has _____.
4. In AutoCAD, _____ are multiple sheets placed one over the above for better drafting practice.
5. Draw the free hand sketch for the given component (figure 1)

Part B (2 X 6 = 12)

1. An equilateral triangle of 50 mm side has one of its edges on HP and that edge is making an angle of 45° to VP. The triangular surface is 30° inclined to HP. Draw its projections.

(OR)

2. A line AB, 90 mm long is inclined at 30° to the HP. Its end A is 10 mm above the HP and 22 mm in front of VP. The elevation of line measures 66 mm. Draw the plan of AB and determine its inclination with the HP.
3. Draw the projections of intersection between two cylinders using the following details. Cylinder with diameter 60mm with axis parallel to HP and VP and Cylinder with diameter 80mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

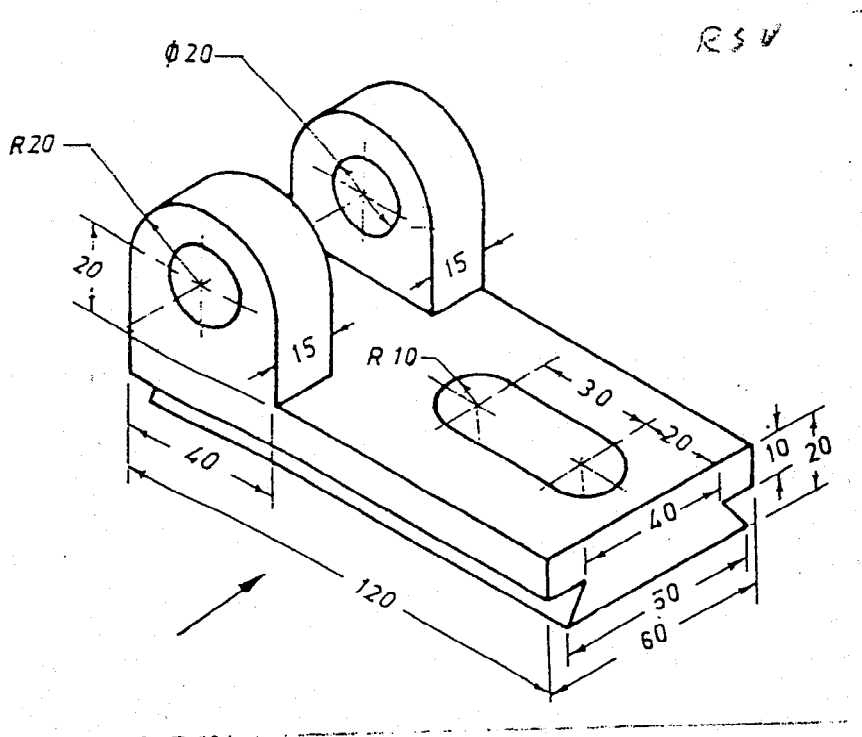
PART C. (18 X 1)

BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
Comprehensive Examination
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1. A hexagonal Prism of base side 45mm and height 80mm is resting on the ground with one of its vertical face inclined by 45° to VP. The axis of the Prism is bisected by a cutting plane inclined at 35° to HP and perpendicular to VP. Using first angle projection.

- Draw the projections of the Solid. (5)
- Show the cutting plane & draw the TRUE sectional view. (5)
- Draw the development of the lateral surfaces of the truncated solid. (5)
- Name all the points with proper notations. (1.5)
- Show all the necessary dimensions. (1.5)

Figure. 1, for free hand sketch



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4 A

Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (5 x 2 = 10)

1. The apparent length of a straight line is _____ than the true length. While the apparent inclination is _____ than the true inclination.
2. The front view of curve of interpenetration obtained when two cylinders of same diameter intersect, such that their axes meet each other while they make an angle of 45°, will be a _____.
3. The isometric view of a hemisphere is a semi circle of _____, while its center above the base is at an _____.
4. The projections of a point lie below the XY line. The point lies in the _____ quadrant.
5. Draw the free hand sketch for the given component.

Part B (2 x 6 = 12)

1. A hexagonal plate of 40 mm side has one of its edges on HP and that edge is making an angle of 55° to VP. The hexagonal surface is 30° inclined to HP. Draw its projections.

(OR)

2. The end P of a line PQ of 70 mm length, is 30 mm in front of VP and 50 mm above the HP. Draw its projections when PQ makes 30° to the HP and 45° to the VP,

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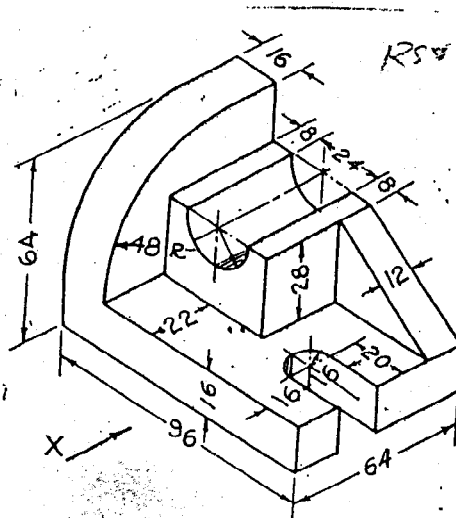
3. Draw the projections of intersection between two cylinders using the following details. – Cylinder with diameter 70mm with axis parallel to HP and VP and Cylinder with diameter 70mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

Part C (1 x 18 = 18)

1. A Cone of base diameter 50 mm and axis 65mm long rests on its base on the H.P. It is cut by a section plane inclined at 45° to the H.P and perpendicular to VP. The cutting plane passes through a point on the axis 35 mm above the base. Using first angle projection.

- | | |
|--|-------|
| Draw the projections of the Solid. | (5) |
| Show the cutting plane & draw the sectional view. | (5) |
| Draw the development of the lateral surfaces of the truncated solid. | (5) |
| Name all the points with proper notations. | (1.5) |
| Show all the necessary dimensions. | (1.5) |

Figure. 1, for free hand sketch



4B

BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
Comprehensive Examination
TAUC111 – Engineering Graphics

Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (5 x 2 = 10)

1. The front view of a line is a point, then in the top view, the line is seen in _____ length, and the line has only _____.
2. The HT and VT for a sphere will be a _____.
3. FIT and SPLINE commands produce the same curve when used to edit polyline – State true or false and give reason in brief.
4. The lateral surface development of a cylinder with a hole drilled such that their axes intersect perpendicular will have an elliptical hole. – State true or false and give reason in brief.
5. Draw the free hand sketch of the given figure.

Part B. (2 x 6 = 12)

1. Draw the projections of a triangular plate ABC (AB = 30 mm, BC = 45 mm and CA = 55 mm) is resting on its longest edge on HP. That edge is inclined to VP at 60°. The surface inclination with HP is 45°. Draw its projections.

(OR)

2. The projectors of the ends A and B of a line AB are 125 mm apart. A is 50 mm above HP and 55 mm in front of the VP. B is 90 mm above HP and 20 mm in front of VP. Determine the true length, inclination.
3. Draw the projections of intersection between two cylinders using the following details - Cylinder with diameter 60mm with axis parallel to HP and VP and Cylinder with diameter 100mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

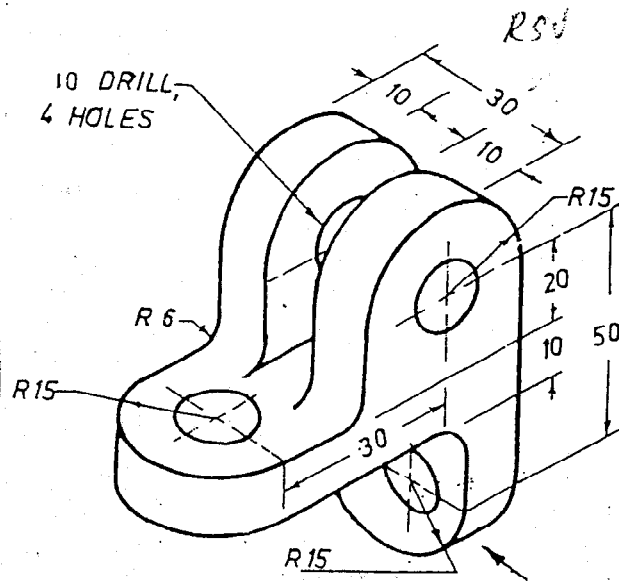
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PART C (1x 18 = 18)

A Square Prism of base side 50 mm and axis 80mm long rests with its base on HP with one of its vertical face inclined at 60° to VP. A section plane inclined at 30° to HP and perpendicular to VP is passing through the mid point of the axis. Using first angle projection.

- Draw the projections of the Solid. (5)
- Show the cutting plane & draw the TRUE sectional view. (5)
- Draw the development of the lateral surfaces of the truncated solid. (5)
- Name all the points with proper notations. (1.5)
- Show all the necessary dimensions. (1.5)

Figure. 1, for free hand sketch



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Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (2 x 5 = 10)

1. The apparent length of a straight line is _____ than the true length. While the apparent inclination is _____ than the true inclination.
2. Tetrahedral is an object made out of _____, while Octahedral has _____.
3. A sphere is sectioned by a plane perpendicular to HP and inclined to VP. The front sectional view can be a parabola - state true or false with reasons in brief.
4. Auxiliary plane is used to project only the true shape of the object. - State true or false with reasons in brief.
5. Draw the free hand sketch of the given figure.

PART B (2 x 6 = 12)

1. An isosceles triangle of base 40 mm and height 60 mm is resting on VP on its shorter edge, with an inclination of 60° to HP. The surface makes an inclination of 54.7° with VP. Draw its projections.

(OR)

1. The end P of a line AB of 80 mm length is 30 mm in front of VP and 50 mm above the HP. Draw the plan and elevation of line when PQ makes 30° to the HP and 45° to the VP.
2. Draw the projections of intersection between two cylinders using the following details - Cylinder with diameter 60mm with axis parallel to HP and VP and Cylinder with diameter 90mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

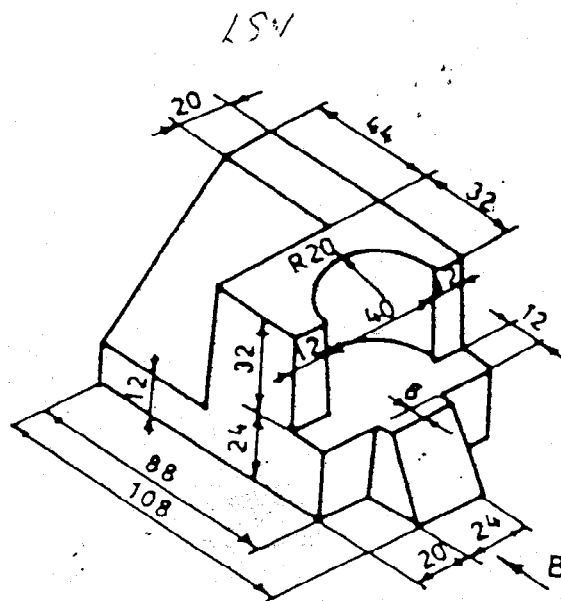
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PART C (1 x 18 = 18)

A Pentagonal Prism side of base 40 mm and axis 80mm long rests with its base on HP. One of the vertical faces is perpendicular to VP. A section plane perpendicular to VP and inclined at 40° to HP cuts the axis 50 mm from the base. Using first angle projection.

- | | |
|--|-------|
| Draw the projections of the Solid. | (5) |
| Show the cutting plane & draw the TRUE sectional view. | (5) |
| Draw the development of the lateral surfaces of the truncated solid. | (5) |
| Name all the points with proper notations. | (1.5) |
| Show all the necessary dimensions. | (1.5) |

Figure. 1, for free hand sketch



BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
Comprehensive Examination
TAUC111 – Engineering Graphics

Date: 18.05.06

Time:

Name:

Roll No

Instructions

1. Answer Part A in the provided space only.
2. Answer Part A in the beginning and return the answer sheet within 10 minutes.
3. Use separate files for Part B and Part C.

Part A (5 x 2 = 10)

1. The HT of a 45 set square lying on the ground is _____. While the VT is a _____.
2. The front view of curve of interpenetration obtained when two cylinders of same diameter intersect, such that their axes meet each other while they make an angle of 45, will be a _____.
3. The projections of a point lie above the XY line. The point lies in _____ Quadrant.
4. PAN command is used to relocate _____, while MOVE command is used to relocate _____.
5. Draw the free hand sketch of the given component

Part B (6 x 2 = 12)

1. A pentagonal plate of base edge 35 mm is resting on HP with its base edge. The base edge on which it rests on HP is inclined to VP at 50°. The surface inclination with HP is 35°. Draw its projections.

(OR)

2. The projectors of the ends A and B of a line AB are 100 mm apart. A is 50 mm above HP and 55 mm in front of the VP. B is 75 mm above HP and 20 mm in front of VP. Determine the true length, inclination
3. Draw the projections of intersection between two cylinders using the following details - Cylinder with diameter 70mm with axis parallel to HP and VP and Cylinder with diameter 70mm with axis parallel to VP and perpendicular to HP with their axes intersecting. (Assume heights of the cylinders).

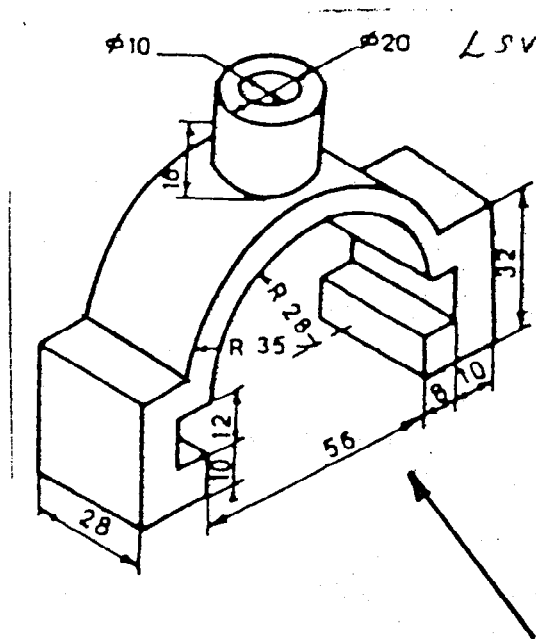
Part C. (18 x 1 = 18)

BITS PILANI – DUBAI CAMPUS
II Semester – 2005 – 06
Comprehensive Examination
TAUC111 – Engineering Graphics

1. A Cone of base diameter 60 mm and axis 90mm long rests on its base on the ground. It is cut by a section plane inclined at 40° to the H.P and perpendicular to VP. The cutting plane cuts the axis 40mm from the base. Using first angle projection.

- Draw the projections of the Solid. (5)
 Show the cutting plane & draw the sectional view. (5)
 Draw the development of the lateral surfaces of the truncated solid. (5)
 Name all the points with proper notations. (1.5)
 Show all the necessary dimensions. (1.5)

Figure. 1, for free hand sketch



1. The front view of a line is a point, then in the top view, the line is seen in true length, and the line has only (HT/VT).
2. A ladder is resting between the ground and vertical wall. The ladder is inclined to HP and VP. The true length of the ladder can be seen in its side view. The
3. The apparent length of a straight line is always lesser than the true length. While the apparent inclination is always greater than the true inclination.
4. The HT of a 45 set square lying on the ground is an isosceles triangle. While the VT is a straight line.
5. The HT and VT for a sphere will be a circle.
6. The sectional view of a cone cut by a cutting plane parallel to its base is circle, while the section view is a hyperbola when the cutting plane is parallel to its axis.
7. The sectional view of a cone cut by a cutting plane inclined to the axis is an ellipse, while the section view is a parabola when the cutting plane is parallel to its generator.
8. Tetrahedral is an object made out of 4 triangular sides, while Octahedral has 8 triangular sides
9. Fit and Spline commands produce the same curve when used to edit polyline – State true or False
10. In AutoCAD, layers are multiple sheets placed one over the above for better drafting practice.
11. the front view of curve of interpenetration obtained when two cylinders of same diameter intersection, such that their axes meet each other while they make an angle of 45, will be a straight line
12. If the cutting plane pass thro the center of the cube and the longest diagonally opposite edges, the true section view will be a regular hexagon.
13. If the sectional side view of a solid lying on the ground with one of its base edge parallel to VP is a trapezoidal, when the cutting plane is perpendicular to both VP and HP, the solid is a square prism.
14. The isometric view of a hemisphere is a semi circle of true length, while its center above the base at an isometric length.
15. The shortest distance traveled by an ant climbs up from one corner to the diagonally opposite corner of a room of 10x10x10ft will be 10 root(5).

16. The lateral surface development of a cylinder with a hole drilled such that their axes intersect perpendicular will be an ellipse – state true or false.
17. A sphere is sectioned by a plane perpendicular to HP and inclined to VP. The front sectional view will be a parabola - state true or false.
18. If both the projections of a point lie above the XY line. The point lies in
19. If both the projections of a point lie below the XY line. The point lies in the
20. The curve of interpenetration of two cones of same diameter intersecting such that the apex of first cone touches the center of the base of the second cylinder will be a circle.
21. The projection of a heptagonal prism resting on the ground with one of its base sides perpendicular to VP, will have one of its generators seen in true length in one of its views – state true or false .
22. In section views, hidden features should be indicated. – State true or false.
23. Auxiliary planes are imaginary reference planes, inclined to either of the reference planes. State true or false.
24. The projections obtained of double auxiliary method will not be the same as that of the object rotation method – state true or false.

Name :

Roll No :

BITS – Pilani, Dubai Campus
TAUC111 – Engineering Graphics
Test -1
Part A
Section 2 – Type B

Date 02.04.06

Duration 1hr (10 minutes for Part A)

Instructions

- Part A should be completed within first 10 minutes of the exam and the answer sheet should be returned.
- The system should not be switched on during this time.
- All answers carry equal marks
- Use the computer system to answer Part B and Part C.
- Draft Part B and Part C as separate files.
- Create Standard title block, with relevant details.

Part A

1. Limits is used to

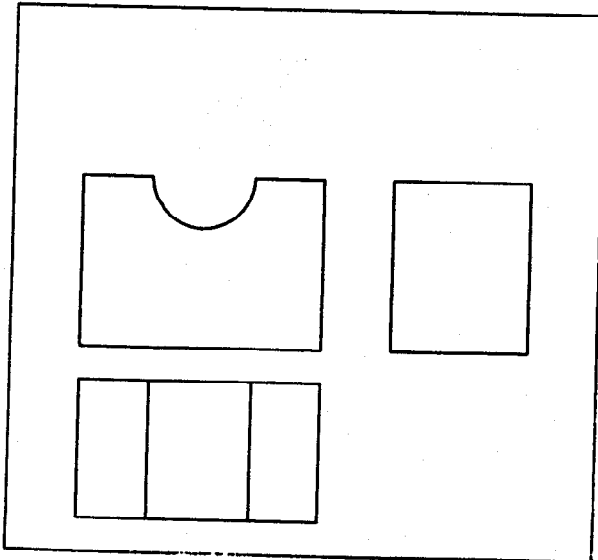
- Define only the drawing area and has no practical application
- When On, AutoCAD accepts attempts to enter points outside the limits.
- When On, AutoCAD accepts attempts to enter points inside the limits only
- Used only for plotting the drawings.

2. The intersection of HP and VP is

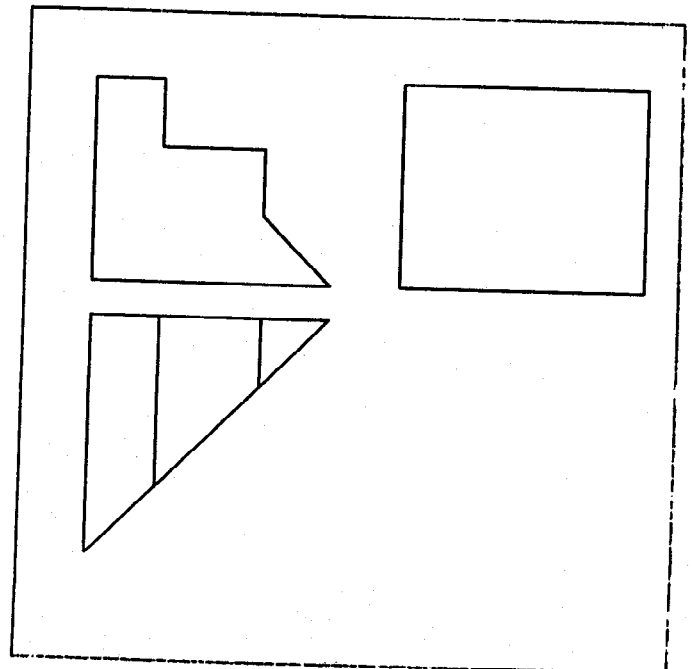
- A straight line
- A point
- A plane
- None of the above.

Question 3 to 4 complete the missing views using free hand sketches in the space provided for it.

3

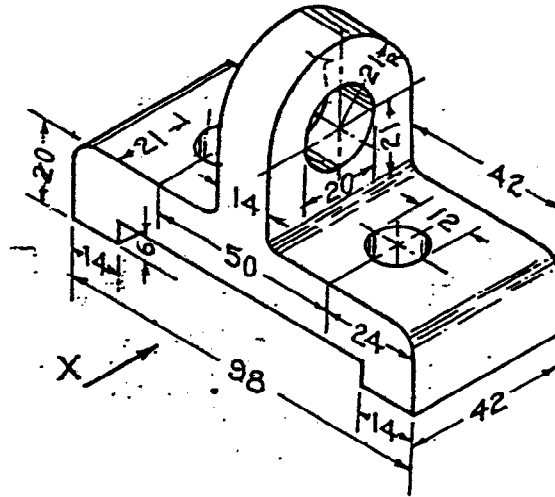


4



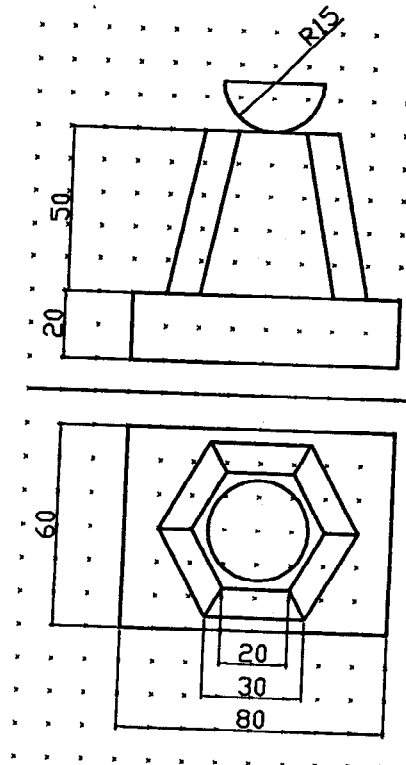
Part B

1. Draw the front and right side view of the following isometric view.



Part C

1. Draw the isometric view of the object using the front / top views given below.



**BITS – Pilani, Dubai Campus
TAUC111 – Engineering Graphics
Test -1
Part A
Section 2 – Type A.**

Date 02.04.06

Duration 1hr (10 minutes for Part A)

Instructions

- *Part A should be completed within first 10minutes of the exam and the answer sheet should be returned.*
- *The system should not be switched on during this time.*
- *All answers carry equal marks*
- *Use the computer system to answer Part B and Part C.*
- *Draft Part B and Part C as separate files.*
- *Create Standard title block, with relevant details.*

Part A

1. The Grid serves the following purpose in Drafting
- a. It is only a reference point
 - b. It can be plotted
 - c. It is a part of the drawing
 - d. The spacing in x and y directions can be different.

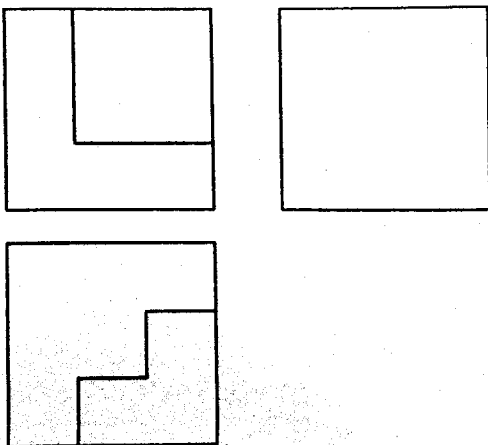
Answer

- i. A and D are correct
- ii. B and C are correct
- iii. A and C are correct
- iv. B and D are correct.

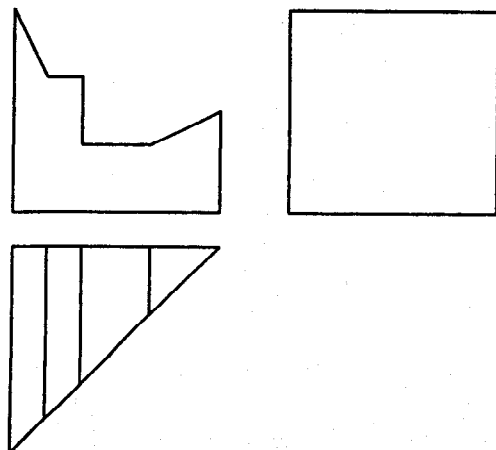
2. In orthographic view
- i. Center line is used to indicate only circular features.
 - ii. Center is used to indicate objects with axis symmetric.
 - iii. Hidden features are not shown.
 - iv. Hidden lines are drawn as dotted lines.

Question 3 to 4 complete the missing views using free hand sketches in the space provided for it.

3.

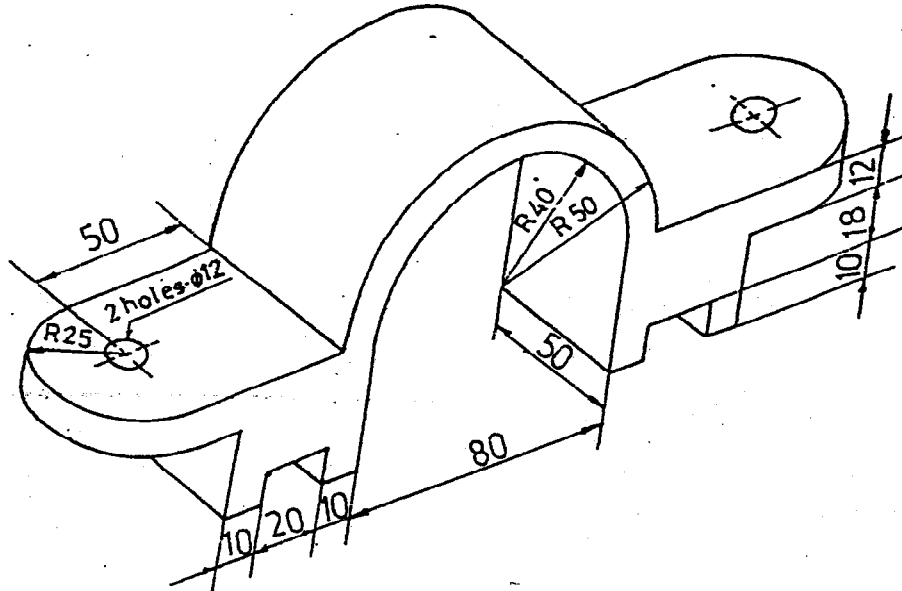


4.



Part B

1. Draw the front and top view of the following isometric view.



Part C

1. Draw the isometric view of the object using the front / top / side views given below.

