

Total No. of Questions—8]

[Total No. of Printed Pages—4

Seat No.	
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[4956]-107

F.E. (Common) EXAMINATION, 2016
ENGINEERING GRAPHICS-I
(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

- N.B. :** (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.
(ii) Figures to the right side indicate full marks.
(iii) Assume suitable data if necessary.
(iv) Retain construction lines.
(v) Marks are reserved for dimensioning and good presentation.

1. The end A of line AB is 20 mm above HP while its end B is 10 mm in front of VP. Its plan and elevation make an angle of 40° and 45° with XY respectively. Draw the projection of line, if the distance between end projectors of line is 60 mm. Find its true length, inclination with HP and VP. Also, locate its traces. [12]

Or

2. A pentagonal plate of 40 mm side is resting on VP on one of its sides such that the corner opposite to it is 25 mm in front of VP. The side in VP makes an angle of 20° with HP. Draw its projections and find its inclination with HP & VP. [12]

P.T.O.

3. A regular hexagonal pyramid, side of base 25 mm and height 60 mm is resting on one of its corner on HP such that slant edge passing through the resting corner is perpendicular to HP and plan of axis is inclined at 45° to VP. Draw its projections when apex is towards the observer. [13]

Or

4. (a) The major and minor diameter of an ellipse is 110 and 90 mm respectively. Draw an ellipse rectangle method. [7]
 (b) Draw the development of lateral surface of hexagonal prism having side of base 35 mm and height 70 mm. [6]
5. The following Fig No. 1 shows a cast iron bracket. By using first angle projection method draw : [13]
- (1) Front view along arrow X
 - (2) Top view
 - (3) Sectional LHSV along plane A-A
- Give all the dimensions :

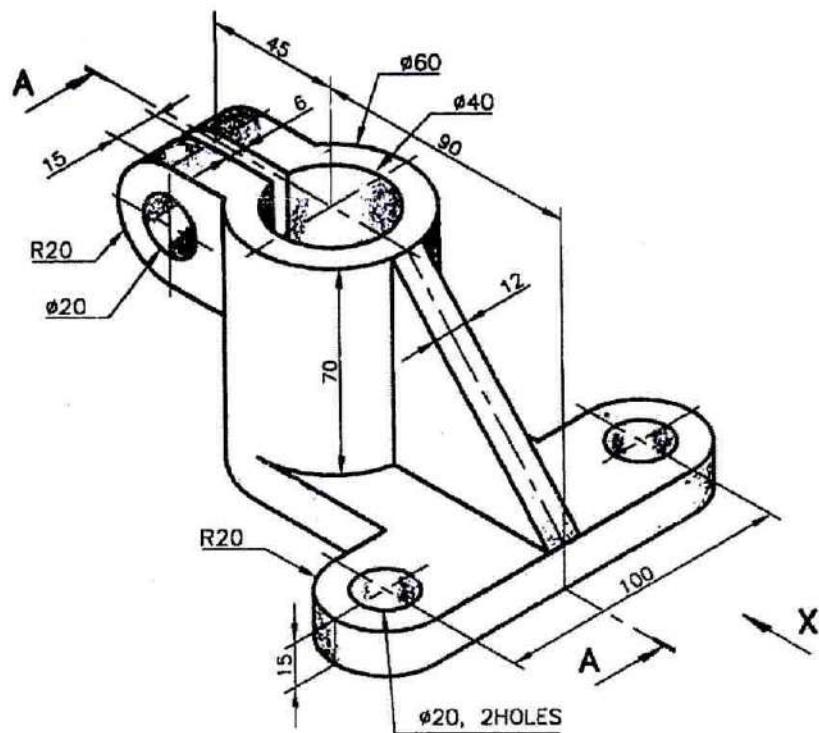


Fig No. 1 C.I. Bracket

Or

6. The following Fig. No. 2 shows a cast iron bracket. By using first angle projection method draw : [13]

- (1) Sectional front view along plane A-A
 - (2) Top view
 - (3) LSHV

Give all the dimensions.

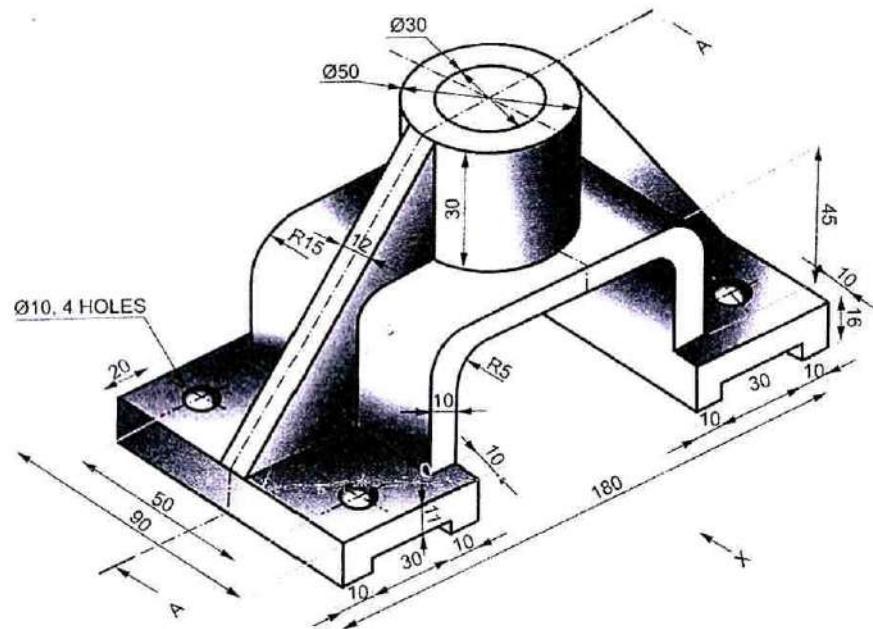


Fig No. 2 C.I. Bracket

7. Fig. No. 3 shows the FV and LHSV of an object. Draw the isometric view using natural scale. [12]

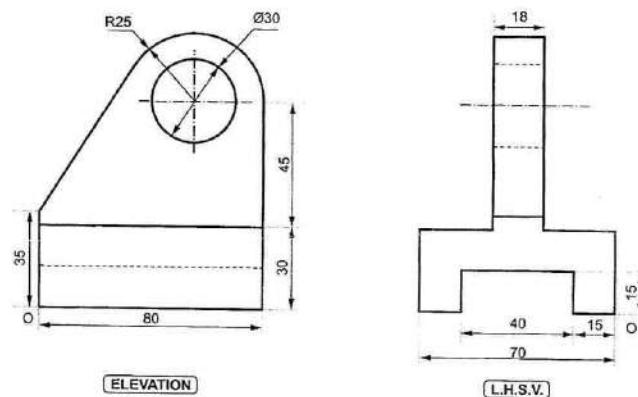


Fig. No. 3
Or

8. Fig. No. 4 shows the FV and Top view of an object. Draw the isometric view using natural scale. [12]

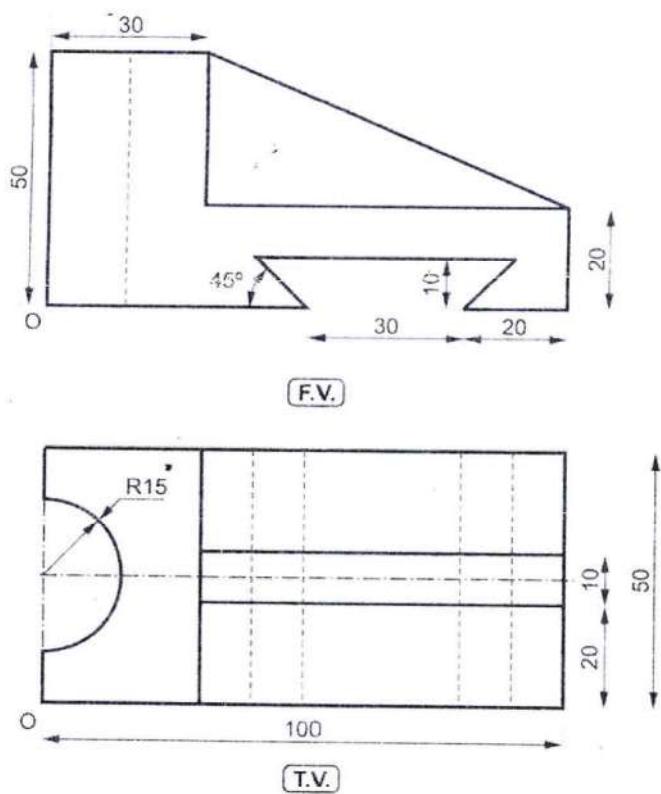


Fig. No. 4

Total No. of Questions : 8]

SEAT No. :

P6996

[Total No. of Pages : 3

[5868]-116

F.Y. Engineering (Semester - I & II)
ENGINEERING GRAPHICS
(2019 Pattern) (102012)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

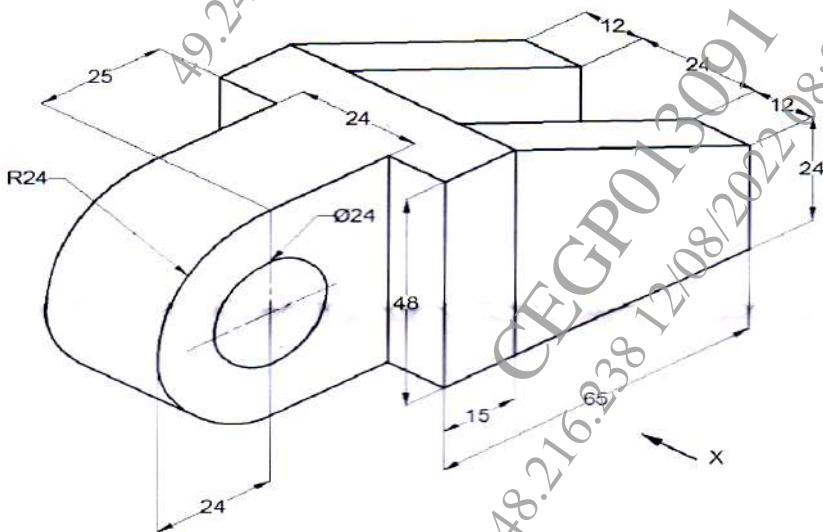
- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.
- 2) Assume suitable data, if necessary.
- 3) Retail all the construction lines.

Q1) Draw a curve traced out by a moving point in such a way that its distance from focus is 21 mm and eccentricity is $\frac{3}{5}$. [8]

OR

Q2) A straight rod AB of 60 mm length revolves one complete revolution with a uniform motion in a clockwise direction when hinged about A. During this period a point P moves along the rod from B to A and reaches back to B with a uniform linear motion. Draw the locus of point P. Name the Curve. [8]

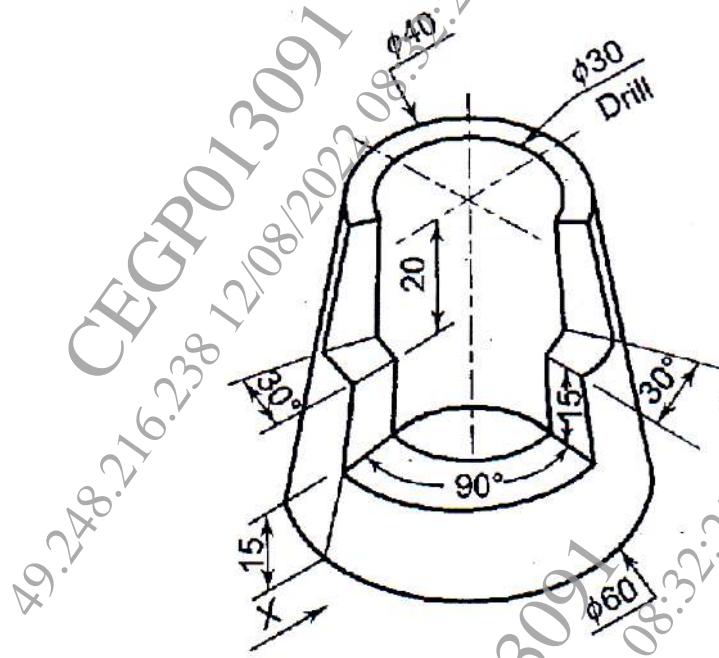
Q3) Figure shows a pictorial view of an object. By using first angle method of projection draw, Sectional Front View along symmetry looking in the direction of X. Top View and LHSV. Give dimensions in all views. [16]



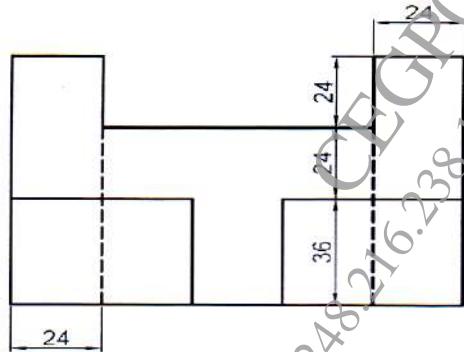
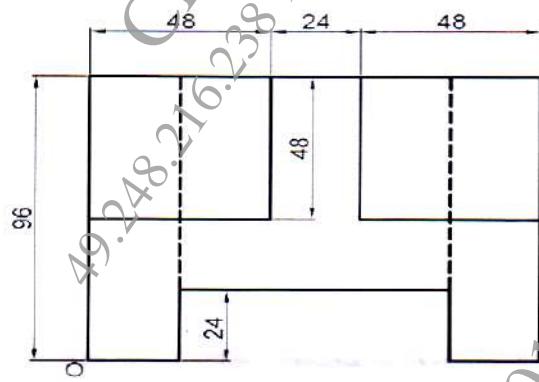
P.T.O.

OR

- Q4)** Figure shows a pictorial view of an object. By using first angle method of projection draw, Front View in the direction of X, Top View and RHSV. Give dimensions in all views. [16]

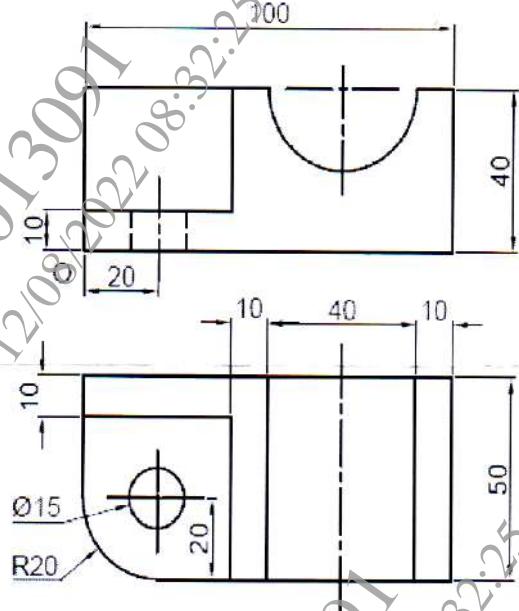


- Q5)** Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



OR

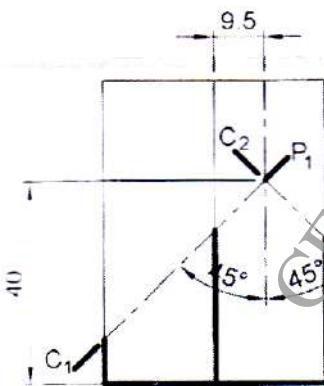
- Q6)** Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



- Q7)** A square pyramid edge of the base 40 mm axis length 70 mm stands with its base on HP with two sides of the base parallel to VP. It is cut by an AIP inclined at 60° to the HP and passing through a point on the axis 40 mm from base. Draw the development of surfaces of pyramid. [10]

OR

- Q8)** Figure shows the FV of a square prism, base side 30 mm and axis 60 mm long, resting on its base on HP such that each of its base edges are equally inclined to VP. The prism is cut by two cutting planes C₁-P₁ and C₂-P₂ as shown in figure. Draw the development of remaining surface of square Prism. [10]



Seat No.	
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Total No. of Questions : 8]

[Total No. of Printed Pages : 4

[4261]-7

F. E. Examination - 2012
 ENGINEERING GRAPHICS - I
 (2012 Course)



Time : 2 Hours]

[Max. Marks : 50

Instructions :

- (1) Use only half imperial size drawing sheet as answer book.
- (2) Retain all construction lines.
- (3) Assume suitable data, if necessary.

- Q.1)** The point P of 75mm long line PQ is 25mm above HP while its end point Q is 20mm in front of VP. Its plan makes 36° with HP while, the projector distance between the end points of line is 60mm. Draw the projections of a line and find the inclinations made by it with HP and VP. Also, locate the traces of line. [12]

OR

- Q.2)** A hexagonal plate, base side 50mm, is resting in HP on one of its corner with its side parallel to VP. Then, its surface is inclined to HP so that the corner opposite to resting corner is 51mm above HP. Draw the projections, if its top view line passing through resting corner and its opposite corner, is inclined to VP at an angle of 35° . Also, find the inclination made by the plate with VP. [12]

- Q.3)** A cone of base diameter 60mm and axis height 80mm is resting in HP on one of its base circumference point. Then, it is inclined to HP such that the point opposite to resting point is 52mm above HP. Draw the projections, if its axis is inclined to VP at 35° , with its apex away from the observer. [13]

OR

[4261]-7

1

P.T.O.

- Q.4) (A)** Construct a parabola by rectangle method, if the base is 60 mm and axis height is 80mm. [07]
- (B)** Draw the development of a hexagonal prism with base side 25mm and axis height 50mm. [06]
- Q.5)** Fig. 1 shows a Pictorial View of an object. By using First Angle Method of projections, draw :
- Sectional Left Hand Side View, along given section plane [04]
 - Front View [04]
 - Top View [04]
 - Dimensions [01]

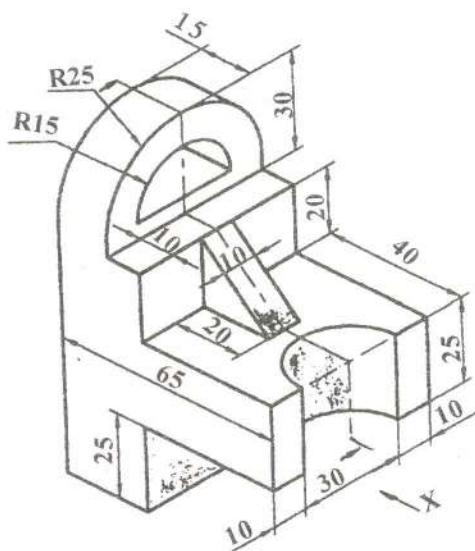


Fig. 1

OR

Q.6) Fig. 2 shows a Pictorial View of an object. By using First Angle Method of projections, draw :

- (a) Sectional Front View, along sectional plane A-A [04]
- (b) Left Hand Side View [04]
- (c) Top View [04]
- (d) Dimensions [01]

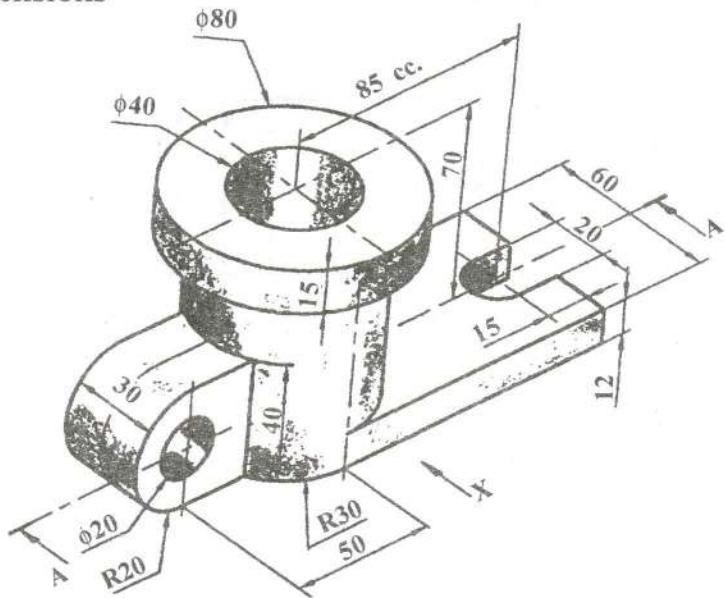


Fig. 2

Q.7) Fig. 3 shows Front View, Top view and End View of a bracket. Draw Isometric View and show overall dimensions : [12]

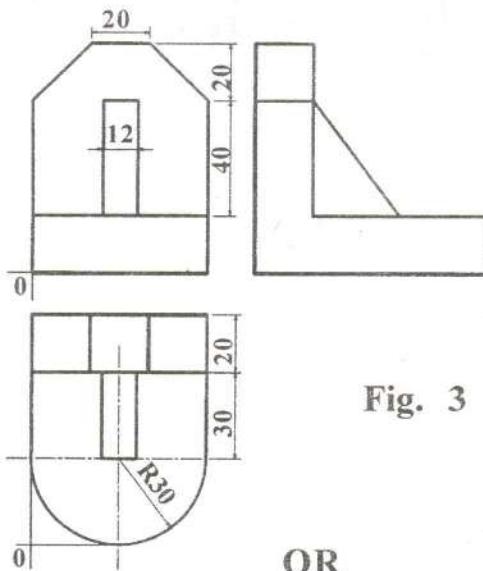


Fig. 3



OR

Q.8) Fig. 4 shows Front View and Top View of an object. Draw Isometric View and show overall dimensions : [12]

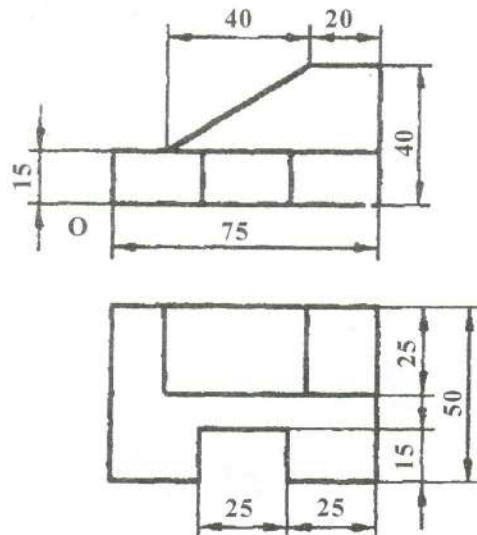


Fig. 4



4456-106A

University of Pune

Total No. of Questions: 8]

[Total No. of Pages: 4

F. E. (Semester – I) Phase III Examination, November 2013

Engineering Graphics – I (102006)

(2012 Course)

Time: 2 Hrs.]

[Max. Marks: 50

Instructions:

1. *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2. *Use only half imperial size drawing sheet as answer book.*
3. *Retain all construction lines.*
4. *Assume suitable data if necessary.*

Q.1 The point A of line AB is in HP and 15 mm in front of VP. Its front view and top view makes 51° and 48° with HP and VP respectively. Draw the projections of line AB if its end point B is 51 mm above HP. Find its true length, true inclinations and locate its traces. [12]

OR

Q.2 A circular plate of diameter 60 mm is resting in HP on its circumferential point. Then its surface is inclined to HP so that its point opposite to resting point is 39 mm above HP. Draw the projections of plate, if the top view of diametrical line passing through resting point is inclined at an angle of 37° to VP. Find the inclination made by the plate with HP and VP. [12]

Q.3 A pentagonal pyramid of base side 40 mm and axis height 80 mm is resting in HP on one of its base side. Then, it is tilted so that its axis is inclined to HP at an angle of 30° . Draw the projections, if the resting side makes 40° with VP, with its apex nearer the observer. [13]

OR

Q.4 A Draw a parabola by rectangle method if base is 60 mm and axis height is [07] 100 mm.

B Draw the development of lateral surface of hexagonal prism of base side 30 [06] mm and axis height 60 mm.

Q.5 Figure 1 shows a pictorial view of an object. By using first angle method of [13] projections, draw;

i. Sectional front view, along symmetry of the object [4]

ii. Left hand side view [4]

iii. Top view [4]

Give all required dimensions. [1]

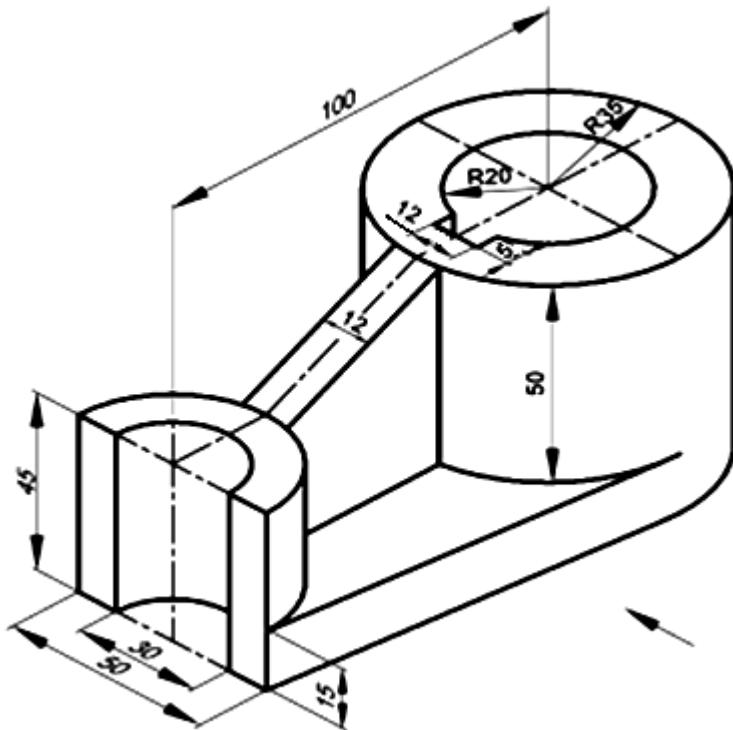


Figure 1

OR

Q.6

Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw; [13]

- i. Front view [4]
- ii. Sectional left hand side view along symmetry of the object [4]
- iii. Top view [4]

Give all required dimensions. [1]

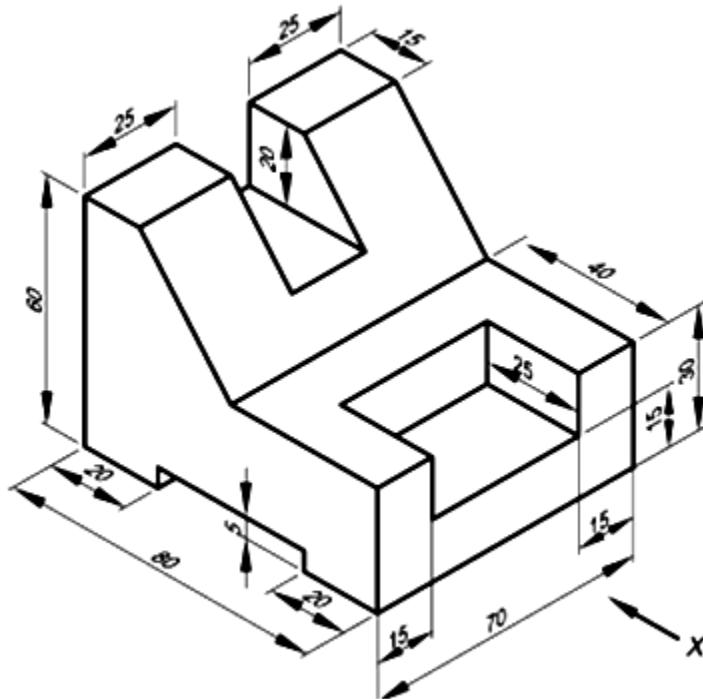


Figure 2

Q.7

Figure 3 shows front view and end view of an object. Draw isometric view [12] and show overall dimensions.

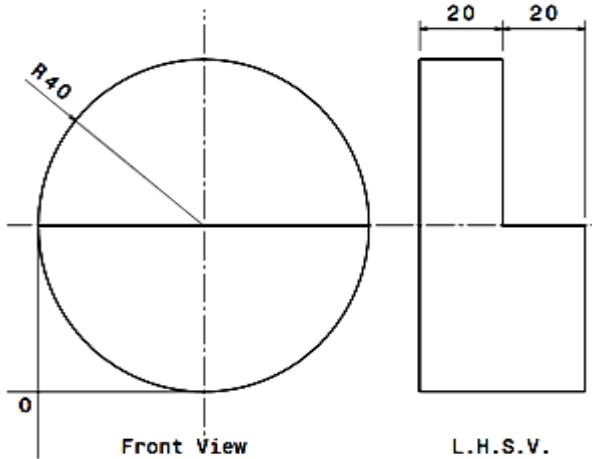


Figure 3

OR

Q.8

Figure 4 shows front view and end view of an object. Draw isometric view [12] and show overall dimensions.

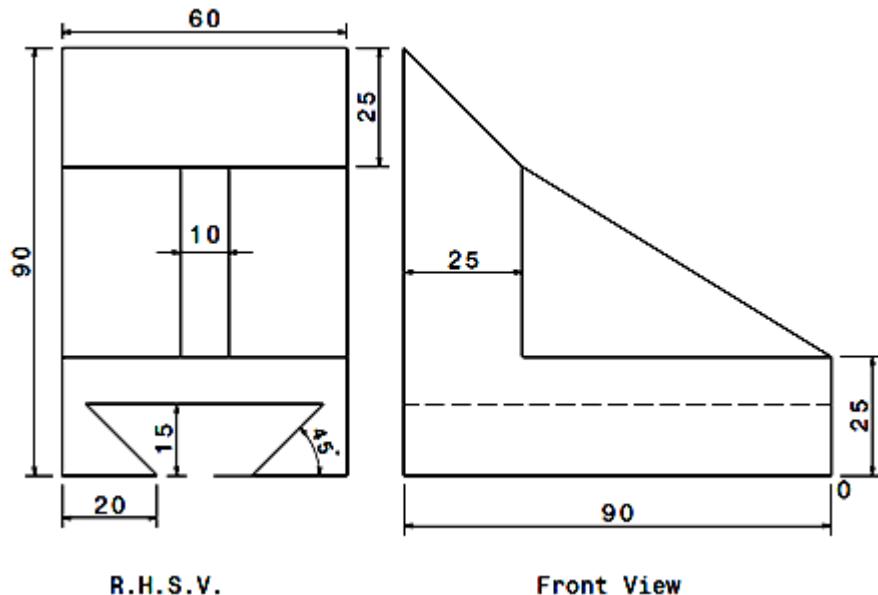


Figure 4

Total No. of Questions : 8]

SEAT No. :

P658

[Total No. of Pages : 3

[4456]-107

F.E. (Semester - I & II) (Phase - IV)
ENGINEERING GRAPHICS - I
(2012 Course)

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Use only half imperial size drawing sheet as answer book.
- 2) Retain all construction lines.
- 3) Assume suitable data if necessary.

Q1) The point P of 75 mm long line PQ is 25 mm above HP while its end point Q is 20 mm in front of VP. Its elevation makes 40° with HP while, the projector distance between the end points of line is 60 mm. Draw the projections of a line and find the inclinations made by it with HP and VP. Also, locate the traces of line. [12]

OR

Q2) A hexagonal plate, base side 40 mm, is resting in HP on one of its corner with its side parallel to VP. Then, its surface is inclined to HP at 40° . Draw the projections, if its top view line passing through resting corner and its opposite corner, is inclined to VP at an angle of 35° . Also find the inclination made by the plate with VP. [12]

Q3) A cone of base diameter 60 mm and axis height 80 mm is resting in HP on one of its base circumference point. Then, its base surface is inclined to HP at 60° . Draw the projections, if its axis is inclined to VP at 35° , with its apex away from the observer. [13]

OR

Q4) a) Construct a parabola by rectangle method, if the base is 60 mm and axis height is 80 mm. [7]
b) Draw the development of a hexagonal prism with base side 25 mm and axis height 50 mm. [6]

Q5) Figure 1 shows a pictorial view of an object. By using first angle method of projections, draw;

- i) Sectional Left hand side view, along given section plane [4]
- ii) Front view [4]
- iii) Top view [4]
- iv) Dimensions [1]

P.T.O.

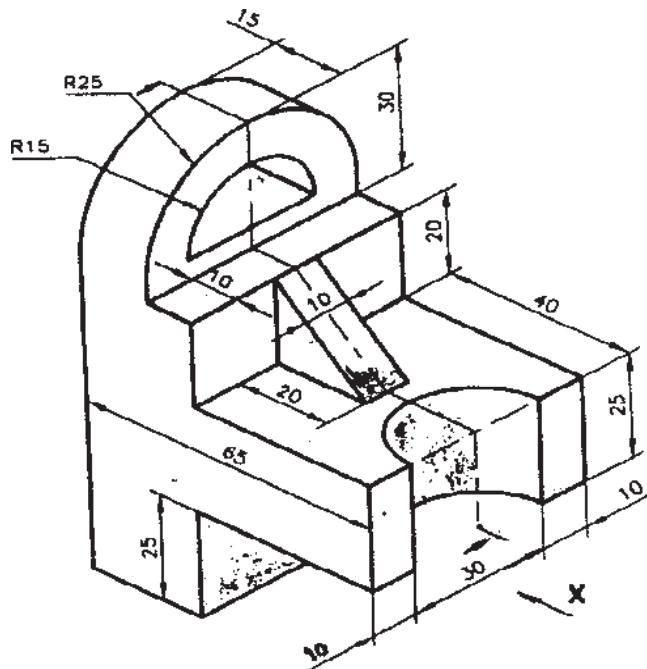


Figure 1

OR

- Q6)** Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw;

- i) Sectional front view, along sectional plane A-A [4]
- ii) Left hand side view [4]
- iii) Top view [4]
- iv) Dimensions [1]

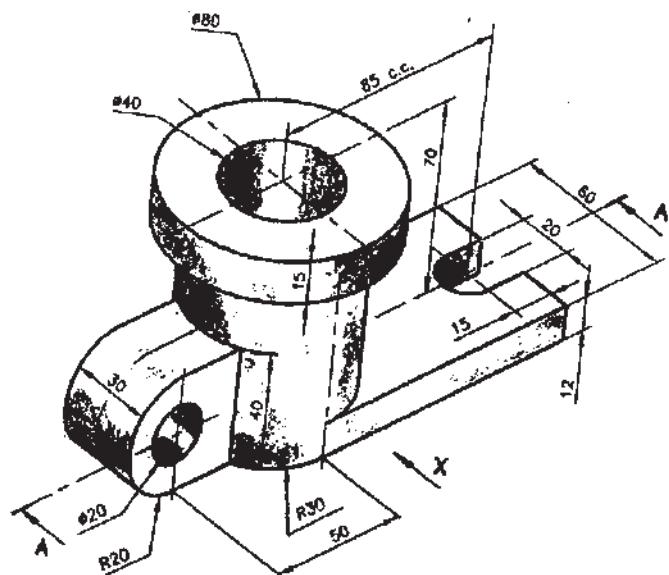


Figure - 2

- Q7)** Figure 3 shows front view, top view and end view of a bracket. Draw isometric view and show overall dimensions. [12]

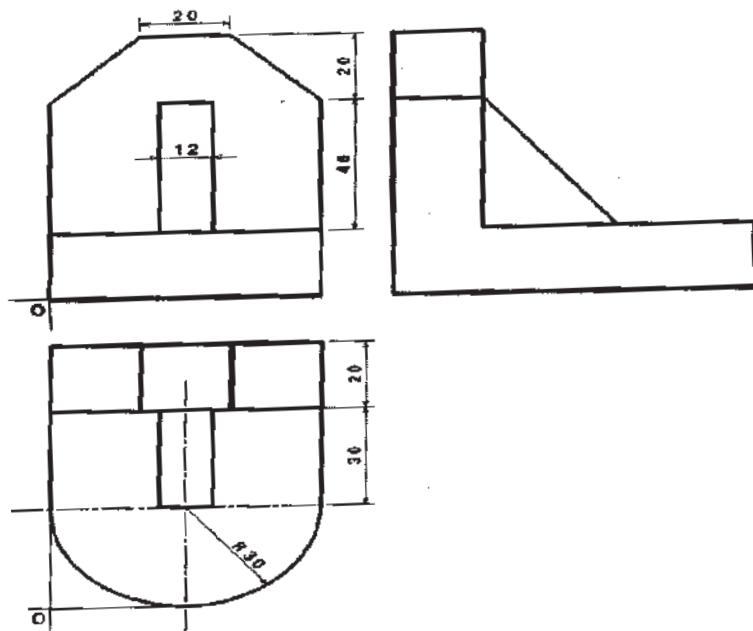


Figure - 3

OR

- Q8)** Figure 4 shows front view and top view of an object. Draw isometric view and show overall dimensions. [12]

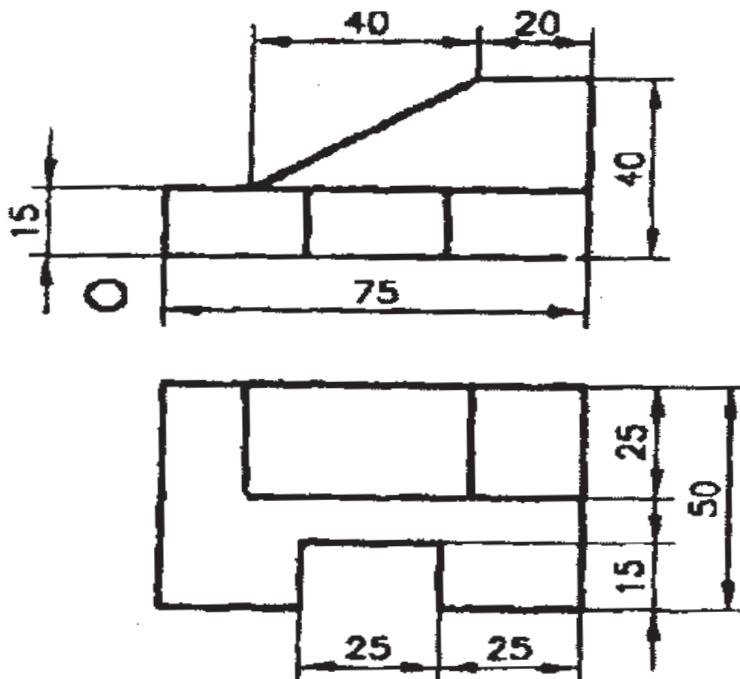


Figure 4





[4656] – 105

Seat No.	
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F.E. (Semester – I) Examination, 2014
ENGINEERING GRAPHICS – I
(2012 Course)

Time : 2 Hours

Max. Marks : 50

Instructions : 1) Solve Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8.

2) Use only half imperial size drawing sheet as answer book.

3) Retain all construction lines.

4) Assume suitable data if necessary.

1. The point A of line AB is in HP and 20 mm in front of VP. The front view and top view of line makes 40° and 45° with HP and VP respectively. Draw the projections if the projector distance between end points of the line is 70 mm. Find true length and true inclinations. Also, locate the traces of line. 12

2. A pentagonal plate of side 40 mm, is resting in HP on its side. Then its surface makes 40° with HP. Draw the projections if its resting side is inclined to VP at an angle of 45° . Find inclination made by the plane with VP. 12

3. A hexagonal pyramid of base side 40 mm and axis height 80 mm is resting in HP on one of its base side. Draw the projections, if its axis is inclined to HP and VP at 30° and 40° . Apex away from observer. 13

4. A) Draw an involute of a circle diameter 42 mm. 7
B) Draw the development of lateral surface of triangular prism of base side 50 mm and axis height 80 mm. 6

P.T.O.



5. Figure 1 shows a pictorial view of an object. By using first angle method of projections, draw; (13)
- i) Sectional front view, along symmetry of object 4
 - ii) Right hand side view 4
 - iii) Top view 4
 - iv) Dimensions 1

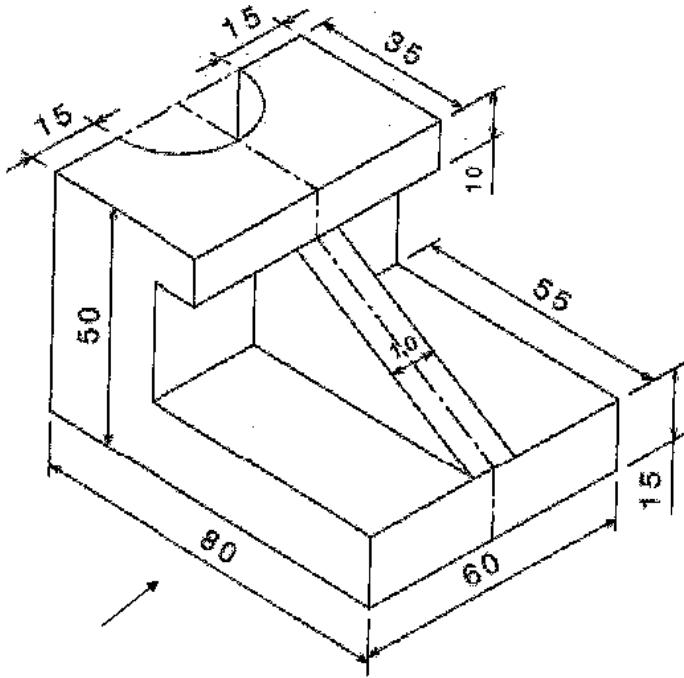


Figure 1

6. Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw; (13)
- i) Sectional front view, along symmetry of object 4
 - ii) Left hand side view 4
 - iii) Top view 4
 - iv) Dimensions 1

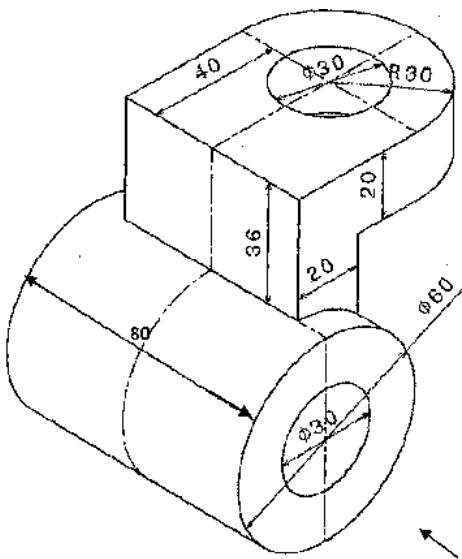


Figure 2



7. Figure 3 shows front view, top view and end view of a bracket. Draw isometric view and show overall dimensions.

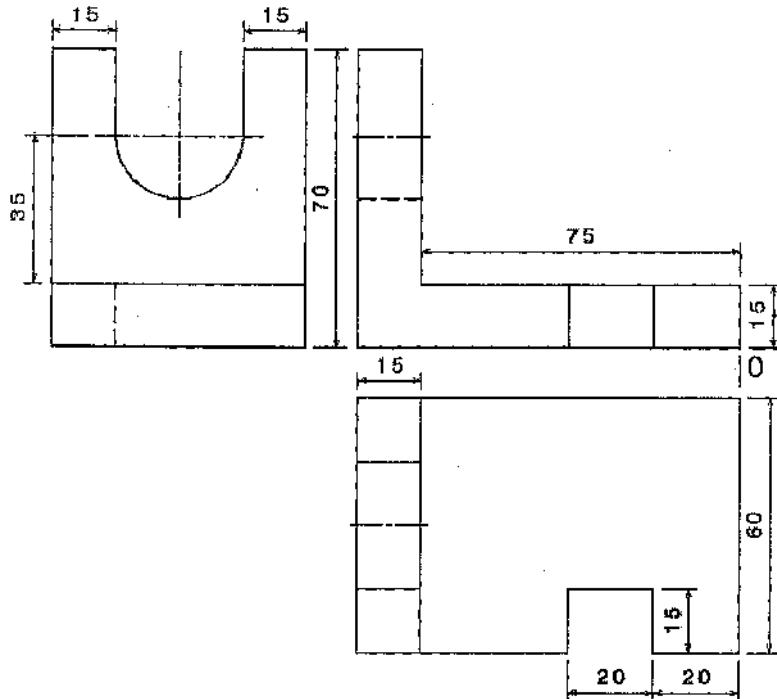


Figure 3

8. Figure 4 shows front view and end view of an object. Draw isometric view and show overall dimensions.

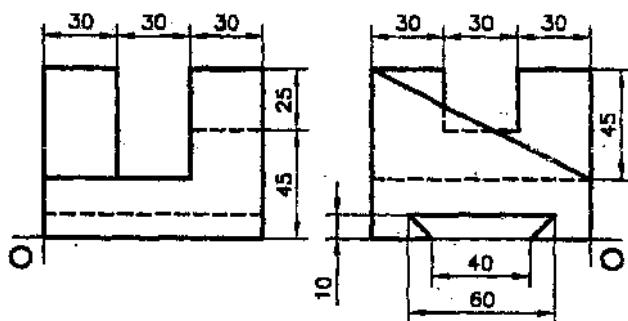


Figure 4

Total No. of Questions—8]

[Total No. of Printed Pages—4+1

Seat No.	
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[4856]-105

F.E. EXAMINATION, 2015
ENGINEERING GRAPHICS—I
(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

- N.B. :** (i) Solve Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.
(ii) Use only half imperial size drawing sheet as answer book.
(iii) Retain all construction lines.
(iv) Assume suitable data, if necessary.

1. The top view and front view of a straight AB measures 70 mm and 58 mm respectively. The straight line AB is inclined at an angle of 35° to horizontal plane. The end A is 15 mm above horizontal plane and 12 mm in front of vertical plane. The other end B is in the first quadrant. Draw the projections of the straight line AB. Find its true length and true inclination with vertical plane, also show its vertical and horizontal traces. [12]

Or

2. A circle of 50 mm diameter is resting on HP on end A of its diameter AC which is 30° inclined to HP while it makes 45° inclined to VP. Draw its projections. [12]

P.T.O.

3. A hexagonal prism of base 25 mm and 15 mm long is positioned with one of its base edges on HP such that the axis is inclined at 30° to HP and 45° to VP. Draw its projections. [13]

Or

4. (a) Point P is 40 mm and 30 mm from horizontal and vertical axes respectively. Draw Hyperbola through it. [7]
 (b) A right circular cone of base diameter 50 mm and axis height 60 mm has its base in horizontal plane. Draw the development of the lateral surface of cone. [6]
5. Using first angle method, draw the following views for the object shown in Fig. 1 :
 (a) Sec. Elevation (Section A-A) [4]
 (b) Plan [4]
 (c) LHSV [4]
 (d) Give all dimensions. [1]

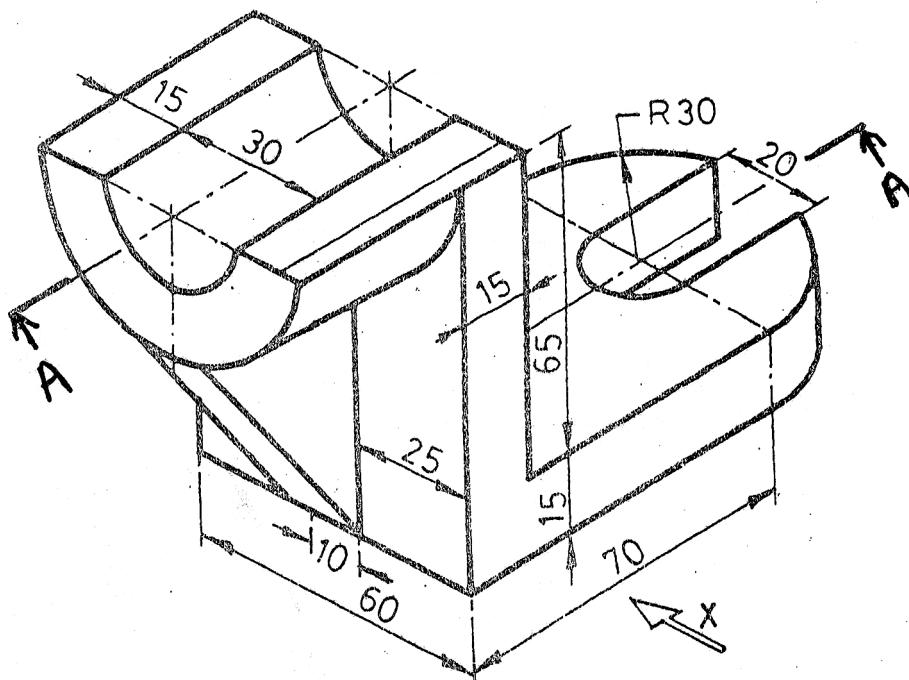


Fig. 1

Or

6. Using first angle method, draw the following views for the object shown in Fig. 2 :
- (a) Elevation from the direction of arrow [4]
 - (b) Plan [4]
 - (c) Sectional right hand side view (Section A-A) [4]
 - (d) Give all dimensions. [1]

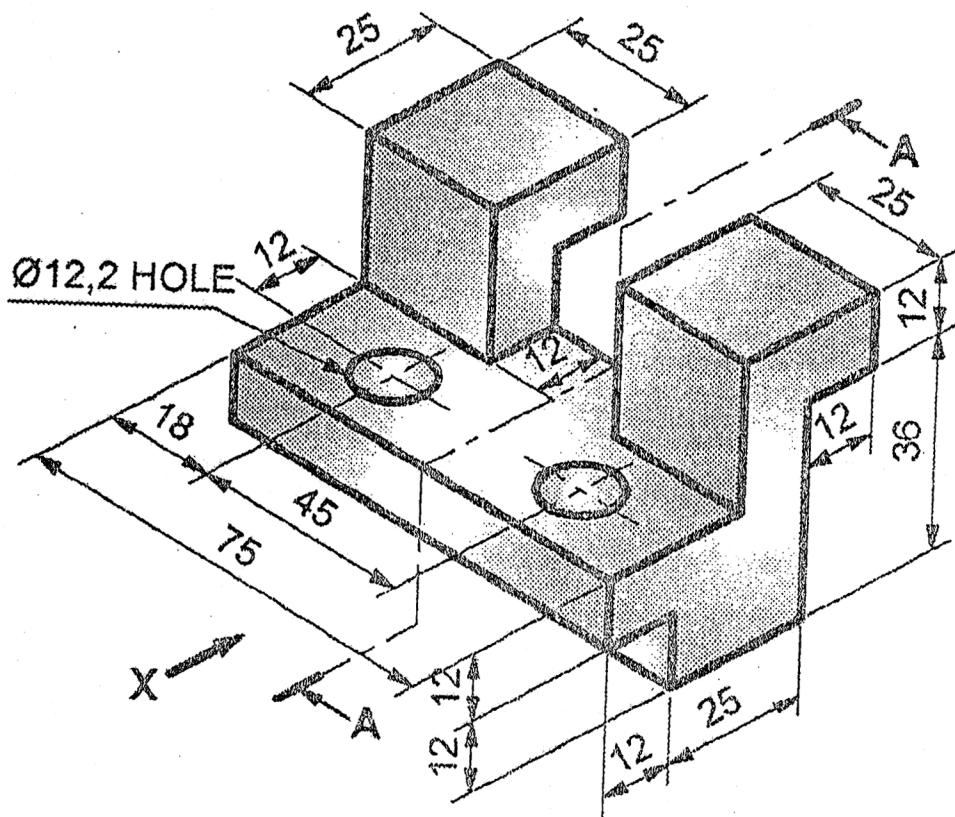


Fig. 2

7. Fig. 3 shows front view, top view, side view. Draw its isometric view by natural scale and show overall dimensions. [12]

ALL VIEWS IDENTICAL

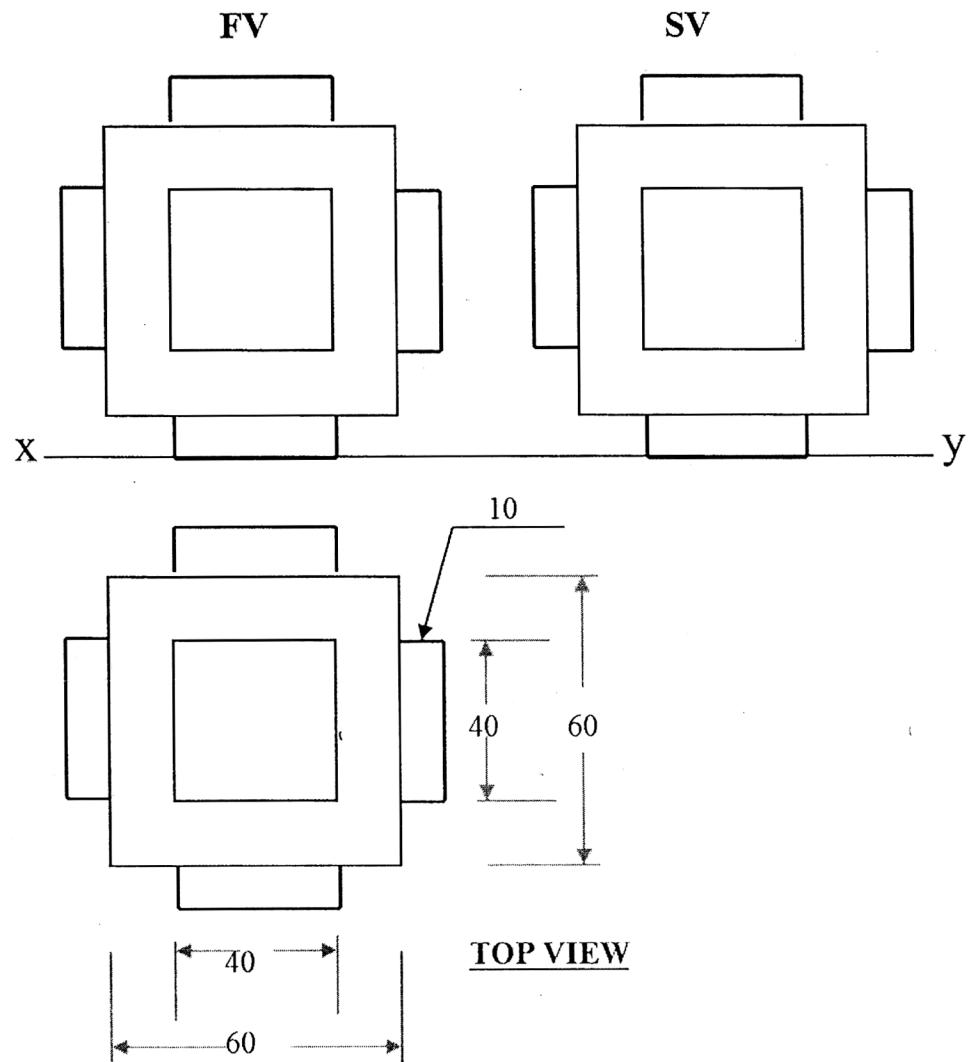


Fig. 3

Or

8. Fig. 4 shows front view, top view. Draw its isometric view by natural scale and show overall dimensions. [12]

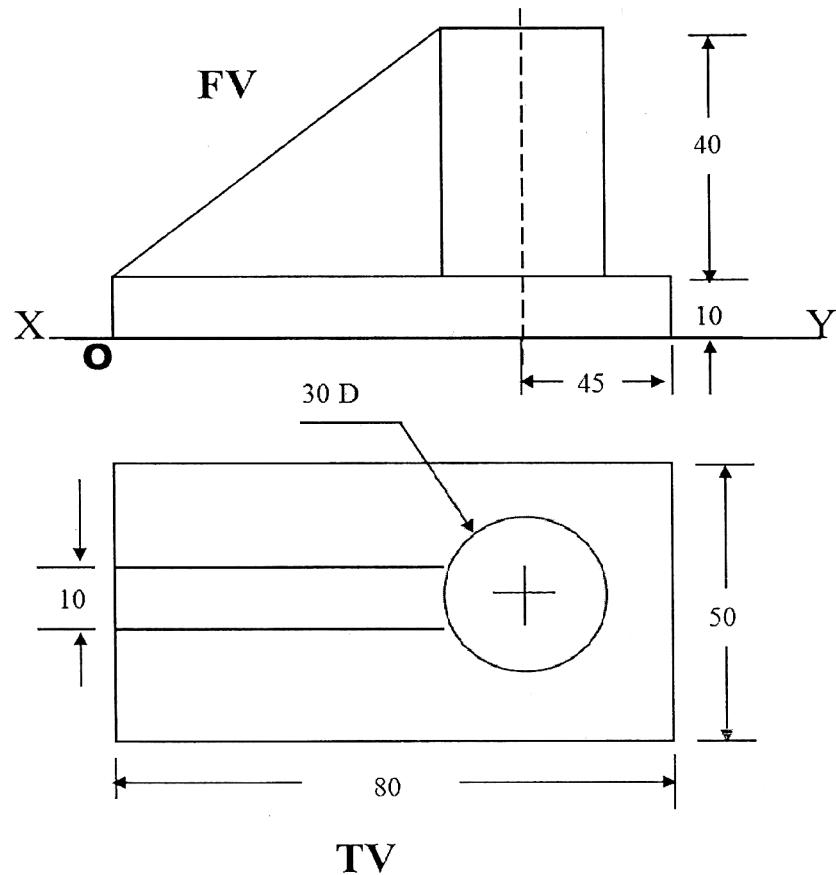


Fig. 4

Total No. of Questions—8]

[Total No. of Printed Pages—4

Seat No.	
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[5151]-103

F.E. EXAMINATION, 2017
ENGINEERING GRAPHICS—I
(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

- N.B. :** (i) Use only half imperial size drawing sheet as answer-book.
(ii) Retain all construction lines.
(iii) Assume suitable data, if necessary.

1. A line PQ 90 mm long, is inclined to H.P and V.P. at 34° and 30° respectively. Draw the projections if point P is 25 mm above H.P. and point Q is 20 mm in front of V.P. Also locate the traces. [12]

Or

2. A circular plate of diameter 60 mm is resting on H.P. It is then inclined to H.P. so that the point opposite to resting points is 40 mm above H.P. Draw the projections if the plan of diameter line passing through resting point makes 35° with XY. Find inclinations made by the plate with reference planes. [12]
3. A cone of base diameter 60 mm and axis height 80 mm is resting on H.P. on its base circumferential point. Draw the projections if its axis is inclined at an angle of 35° and 30° with V.P. and H.P. respectively, with apex nearer to observer. [13]

P.T.O.

Or

4. (a) Draw a helix of one revolution to a cylinder of base diameter 60 mm and axis height 120 mm. [7]
- (b) Draw the development of lateral surface of pentagonal prism of base side 30 mm and axis height 60 mm. [6]
5. Figure 1 shows a pictorial view of an object. By using first angle method of projections, draw :
- (i) Front view [4]
 - (ii) Sec. right hand side view along the line of symmetry [4]
 - (iii) Top view [4]
 - (iv) Dimensions. [1]

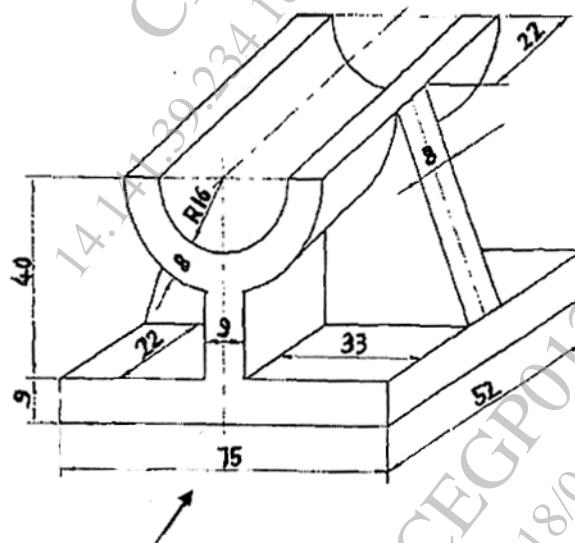


Figure 1

Or

6. Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw :
- (i) Sectional front view, along sectional plane [4]
 - (ii) Left hand side view [4]
 - (iii) Top view [4]
 - (iv) Dimensions. [1]

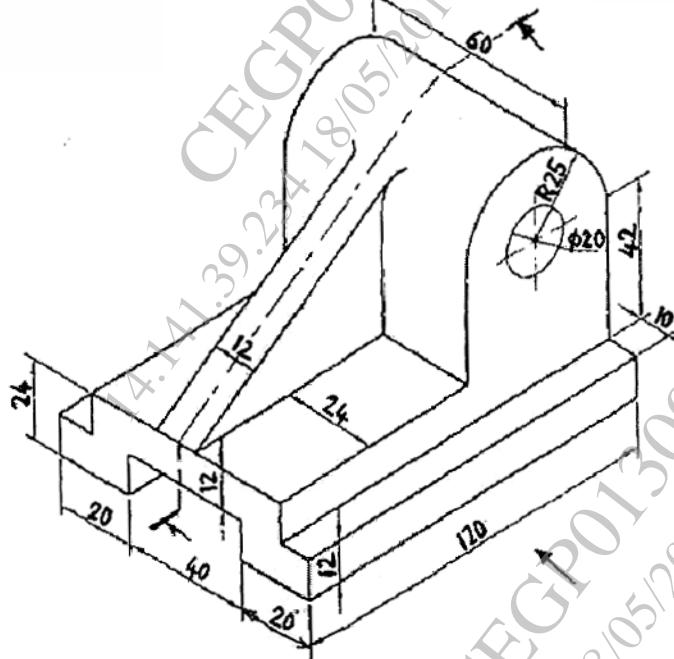


Figure 2

7. Figure 3 shows front view and end view of a bracket. Draw isometric view and show overall dimensions. [12]

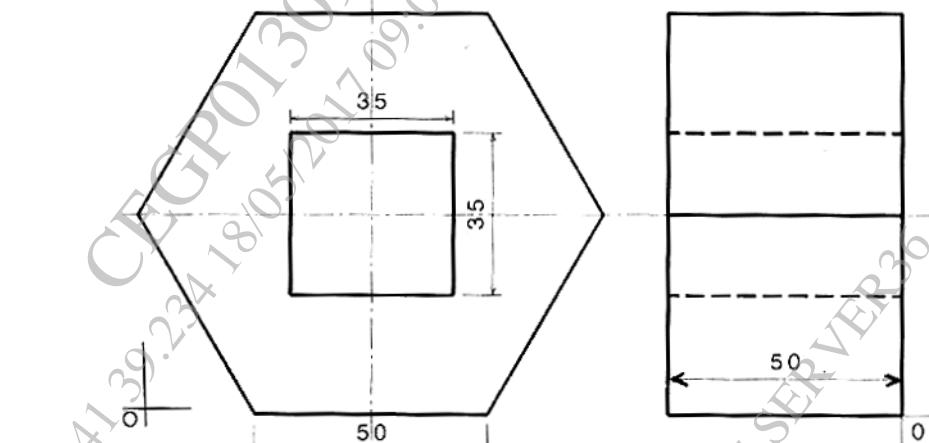


Figure 3

Or

8. Figure 4 shows front view and end view of an object. Draw isometric view and show overall dimensions. [12]

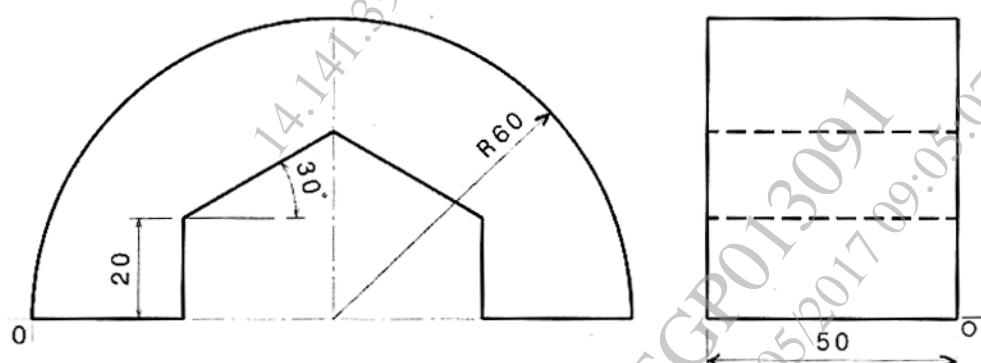


Figure 4

Total No. of Questions—8]

[Total No. of Printed Pages—4

Seat No.	
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[5558]-107

**F.E. EXAMINATION, 2019
ENGINEERING GRAPHICS—I
(2015 PATTERN)**

Time : 2 Hours

Maximum Marks : 50

Instructions:

1. *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2. *Use only half imperial size drawing sheet as answer book.*
3. *Retain all construction lines.*
4. *Assume suitable data if necessary.*

Q.1 A line AB 90mm long, having its endpoint A is on HP and 20 mm in front of VP. The Plan length of the line AB is 70 mm and makes an angle of 40° with VP. Draw the Projections of line AB. Find the inclinations made by the line with HP and VP Also locate its traces. 12

OR

Q.2 A circular plane lamina having diameter 60 mm is resting on one of its Circumferential point on HP in such a way that its plan appears as an ellipse having a major axis 60 mm long and minor axis is 40mm. Draw the projections, if the plan of the minor axis makes an angle of 40° to the VP. 12

Q.3 A pentagonal pyramid having base edge 40 mm and axis 80 mm long is resting on HP on one of its base edge in such a way that the axis of the solid makes an angle of 50° to HP and the base edge on the HP makes an angle of 20° to VP, draw the projections of the solid when its apex is towards the observer. 13

OR

Q.4 A Draw a cycloid of the rolling circle of diameter 55 mm along a straight line for one convolution and consider the starting point is farthest from the ground 07

P.T.O.

B Draw the development of lateral surface for a pentagonal prism having a base edge 30 mm and axis height is 80 mm 06

Q.5 Figure shows a pictorial view of an object. By using first angle method of projections, draw; 13

- i. Draw the FV in the direction of X, [04]
- ii. Top View [04]
- iii. Sectional RHSV along the section line A-A for Figure A. [04]
- iv. Overall Dimensions [01]

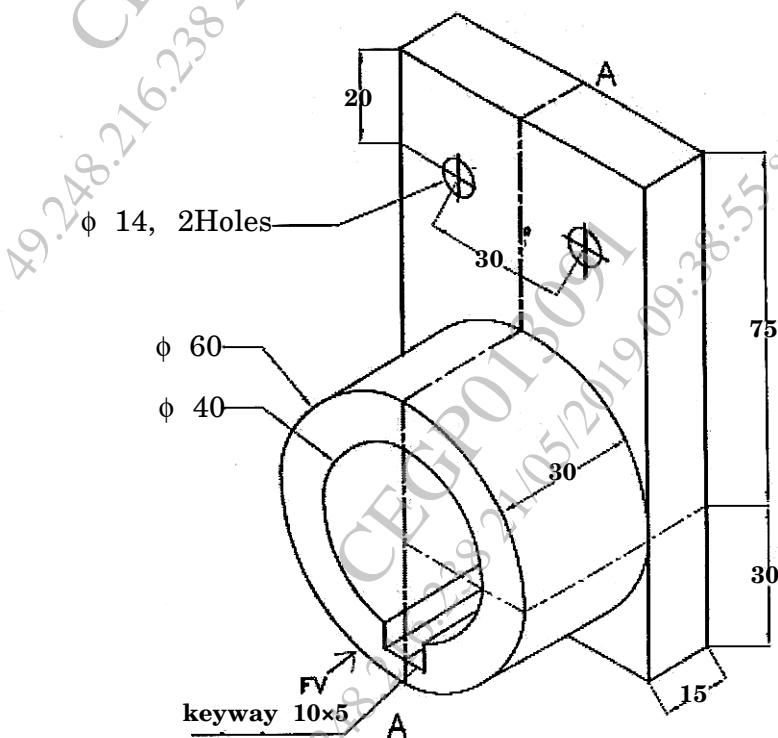


Fig. A

OR

Q.6 Figure shows a pictorial view of an object. By using first angle method of projections, draw; 13

- i. Draw the sectional FV along cutting plane line A-A, [04]
- ii. Top View, [04]
- iii. LHSV for figure B given below [04]
- iv. Overall Dimensions [01]

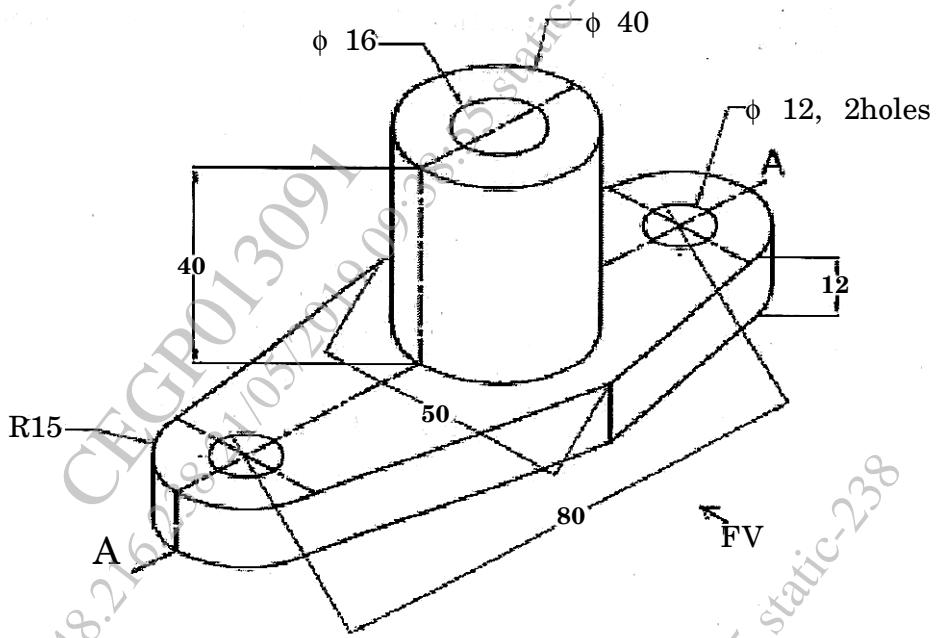


Fig. B

Q.7

Figure C shows the FV and SV of a bracket. Draw the isometric view and show the overall dimensions.

12

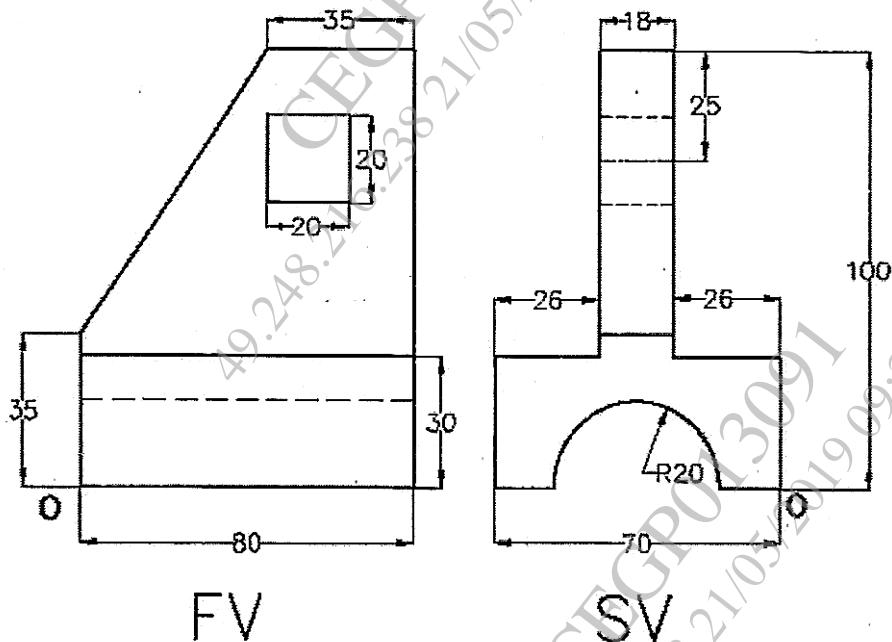


Fig. C

OR

Q.8

Figure D shows the front view and top view of an object. Draw an isometric view and show the overall dimensions

12

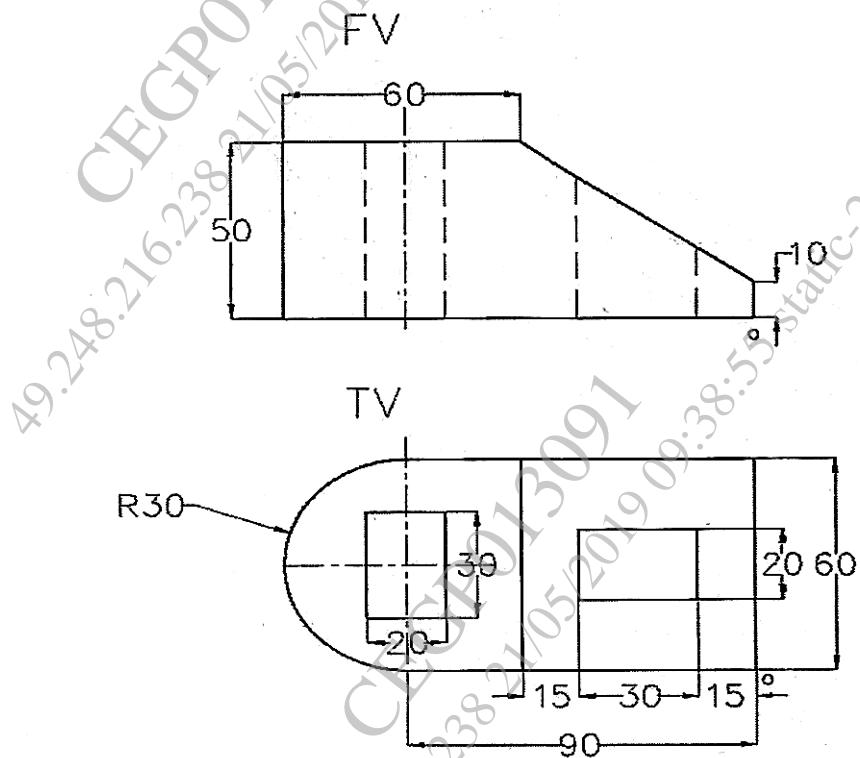


Fig. D

!!All the Best!!

Total No. of Questions—8]

[Total No. of Printed Pages—4

Seat No.	
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[5056]-17

F.E. EXAMINATION, 2016
ENGINEERING GRAPHICS—I
(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

- N.B. :**— (i) Use only half imperial size drawing sheet as answer book.
(ii) Retain all construction lines.
(iii) Assume suitable data if necessary.

1. A point P of line PQ is 25 mm above H.P. and point Q is 20 mm in front of V.P. The plan and elevation makes 36^0 and 40^0 with XY respectively. Draw the projections if the projector distance between the end points is 60 mm. Also locate the traces and find the true length. [12]

Or

2. An equilateral triangular plate ABC is resting in V.P. on side AB, 60 mm. Then its surface is inclined to V.P. at 40^0 . Draw the projections if points B and C are 10 mm and 60 mm above H.P. respectively. Find inclination made by the plate with H.P. [12]
3. A cylinder of base diameter 60 mm and axis height 80 mm is resting on H.P. on one of the base circumferential point. Draw the projections if its axis is inclined at an angle of 35^0 nad 45^0 with V.P. and H.P. respectively. [13]

P.T.O.

Or

4. (a) Draw a helix of one revolution to a cylinder of base diameter 60 mm and axis height 120 mm. [7]
- (b) Draw the development of lateral surface of triangular prism of base side 40 mm and axis height 60 mm. [6]
5. Figure 1 shows a pictorial view of an object. By using first angle method of projections, draw :
- (i) Front view [4]
 - (ii) Sect. Left hand side view along sectional plane B-B [4]
 - (iii) Top view [4]
 - (iv) Dimensions. [1]

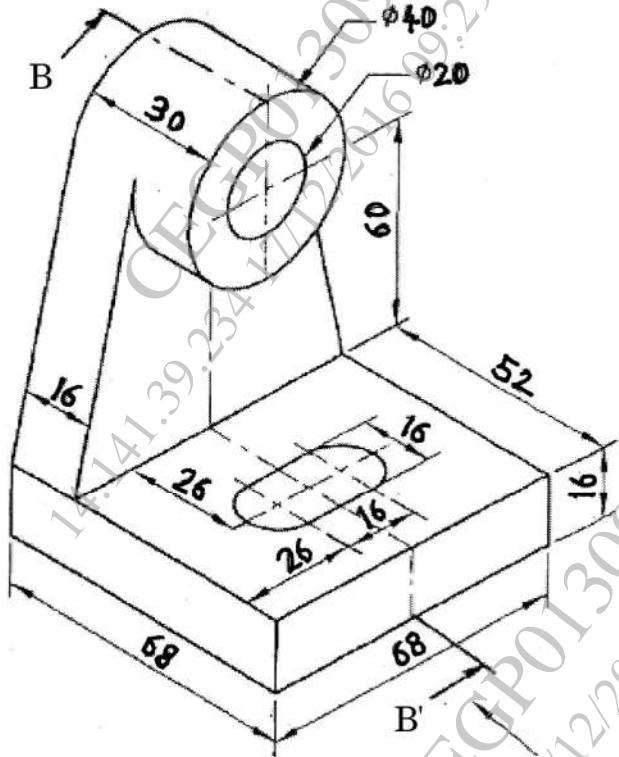


Fig.1

Or

6. Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw :
- (i) Sectional front view, along line of symmetry [4]
 - (ii) Left hand side view [4]
 - (iii) Top view [4]
 - (iv) Dimensions. [1]

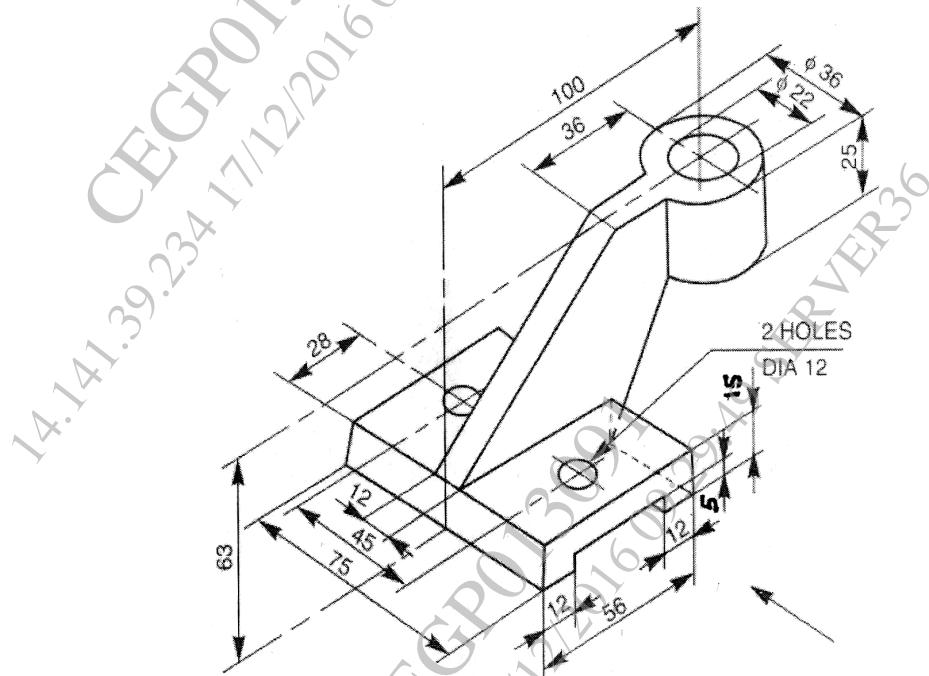


Fig. 2

7. Figure 3 shows front view and end view of a bracket. Draw isometric view and show overall dimensions. [12]

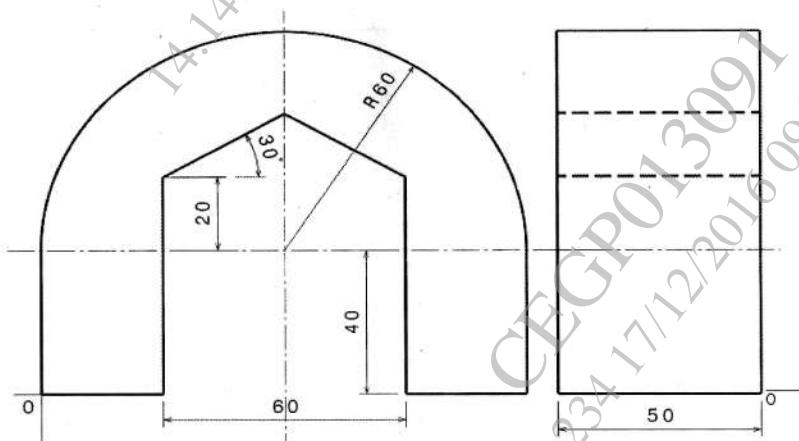


Fig. 3

Or

8. Figure 4 shows front view and top view of an object. Draw isometric view and show overall dimensions. [12]

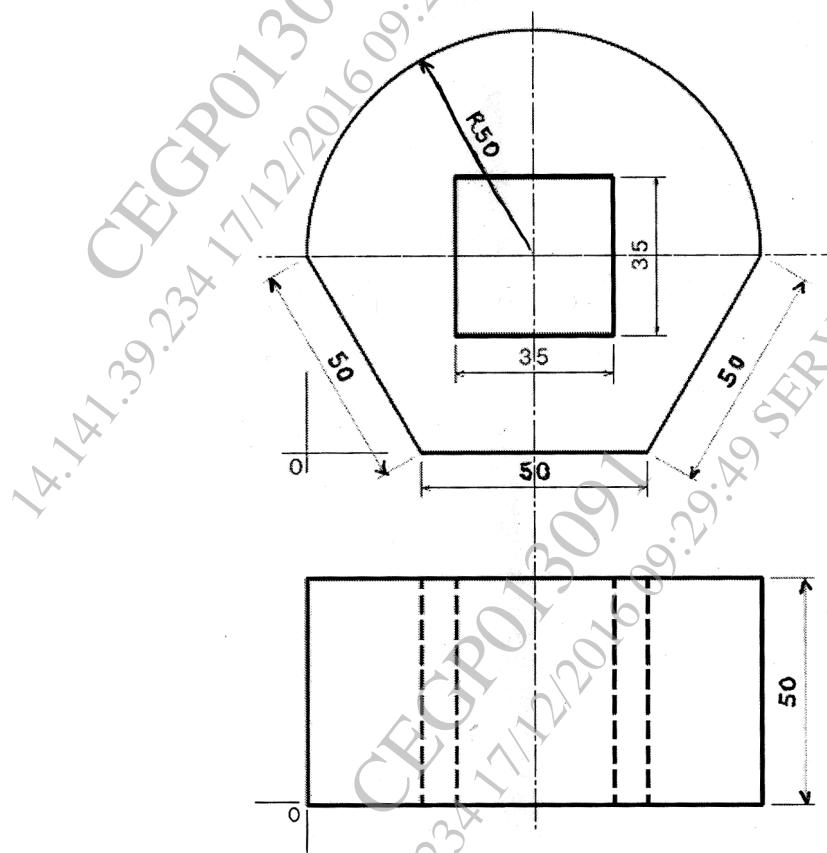


Fig. 4

Total No. of Questions : 8]

SEAT No. :

P4423

[Total No. of Pages : 3

[5251]-1007

F.E. (Engineering) (II Semester)

ENGINEERING GRAPHICS - I

(2015 Pattern)

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) Retain all construction lines.
- 2) Figure to the right indicates full marks.
- 3) Assume suitable data wherever necessary.
- 4) Use of electronic pocket calculator is allowed (non-programmable).

Q1) The point A of line AB is in H.P and 15 mm in front of V.P. Its front view and top view makes 51° and 48° with H.P. and V.P. respectively. Draw the projections of line AB if projector distance between end points of the line is 41 mm. Find its true length, true inclinations and locate its traces. [12]

OR

Q2) A hexagonal plate of 35 mm side is resting on one of its corner on the H.P. Draw projections of the plate when the plate surface makes an angle of 35° to H.P. and the diagonal passing through resting corner makes 22° inclination to V.P. [12]

Q3) A hexagonal prism of base 35 mm and height 85 mm is resting on one of its base corners. The vertical edge passing through the resting corner makes 45° inclination to H.P. Draw projections of the prism when the axis makes 22° inclination to V.P. [13]

OR

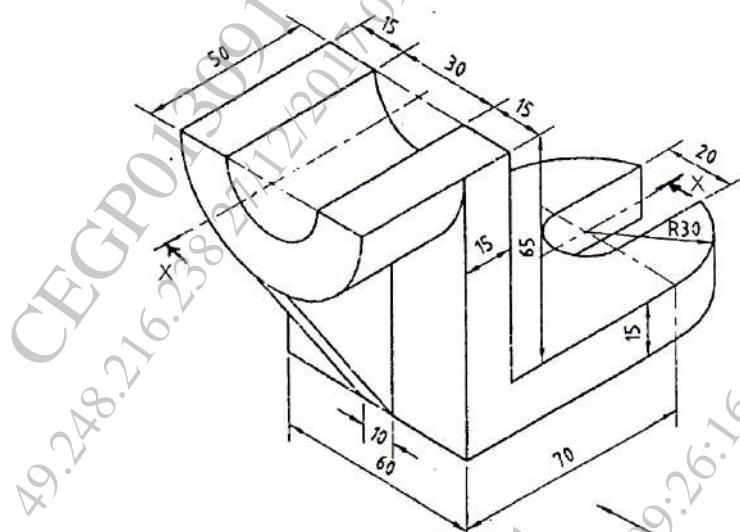
Q4) a) Draw a Parabola of 100 mm height and 150 mm base. [7]
b) Draw the development of lateral surface of pentagonal prism of base side 30 mm and axis height 70 mm. [6]

P.T.O.

Q5) For the pictorial view shown in the Figure draw, [13]

- a) Sectional front view along the section XX
- b) Top view
- c) Left hand side view

Place all necessary dimensions. Use first angle method of projections.

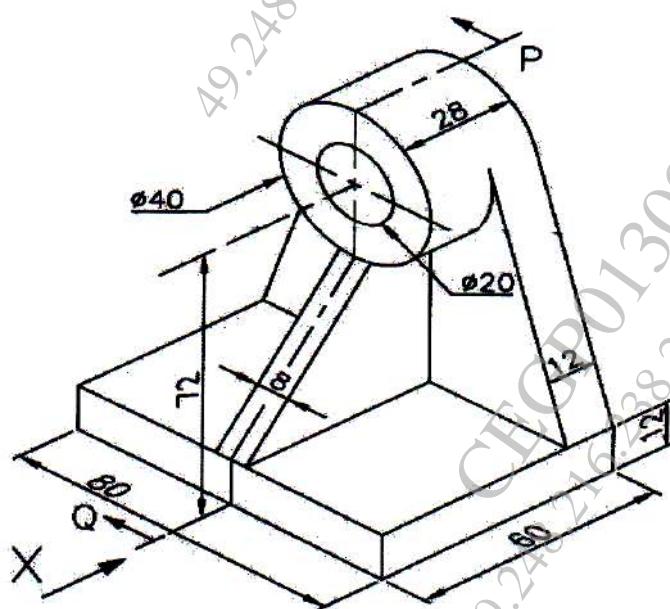


OR

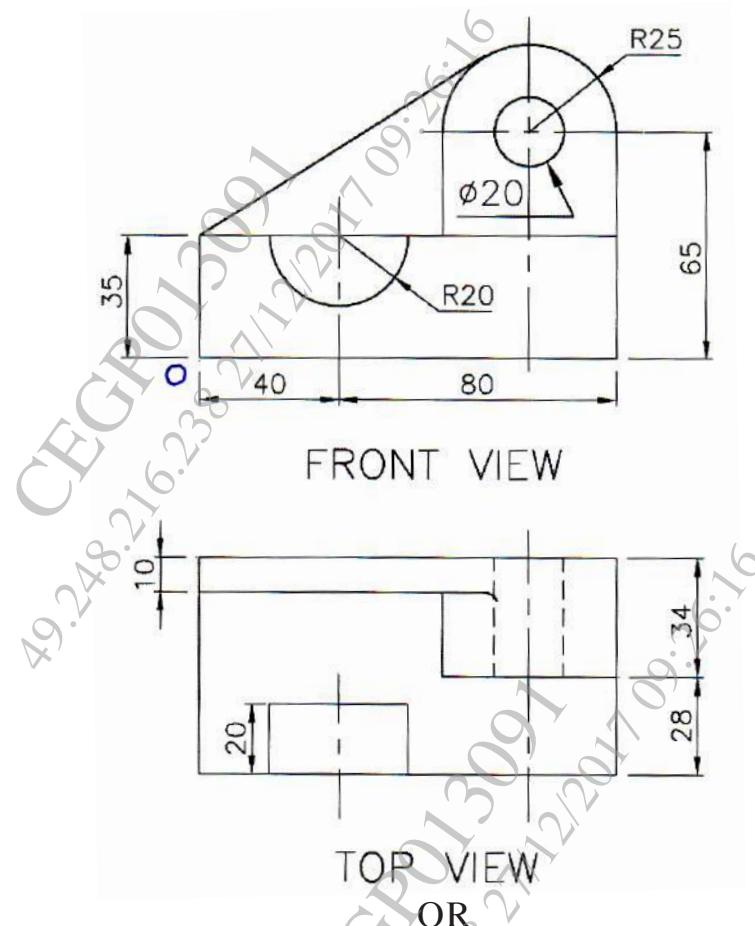
Q6) For the pictorial view shown in the Figure draw, [13]

- a) Front view in the direction X
- b) Top view
- c) Sectional Right hand side view along PQ

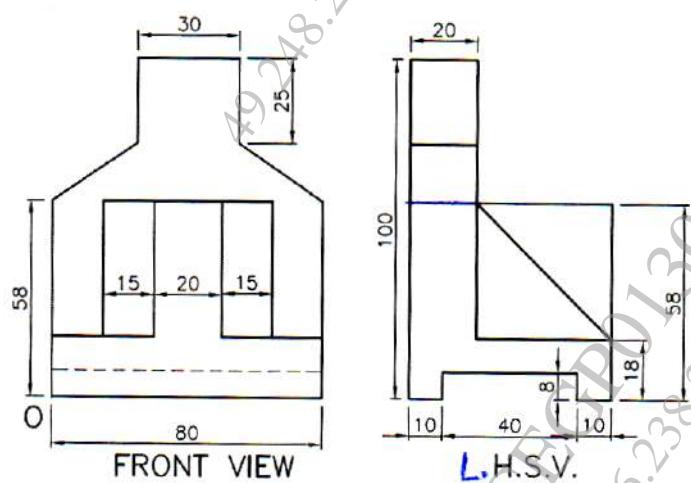
Place all necessary dimensions. Use first angle method of projections.



Q7) Figure shows front view and top view of an object. Draw Isometric view and show overall dimensions. [12]



Q8) Figure shows front view and right hand side view of an object. Draw Isometric view and show overall dimensions. [12]



Total No. of Questions : 8]

SEAT No. :

P4418

[Total No. of Pages : 3

[5251]-1002

F.E. First Year (Engineering) (II Semester)
ENGINEERING PHYSICS
(2015 Pattern)

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) Neat diagram must be drawn wherever necessary.
- 2) Figure to the right indicate full marks.
- 3) Use of logarithmic table, slide rule, mollier charts, Electronics Calculator, and steam table is allowed.
- 4) Assume suitable data, if necessary.

- Q1)** a) Explain the theory of formation of Newton's Rings? Hence, explain how the refractive index of liquid can be determined. [6]
- b) How many lines per cm are there on the surface of a plane transmission grating which gives 1st order of light of wavelength 6000AU at an angle of diffraction 30°. [3]
- c) List any three applications of ultrasonics. Explain any one of them in brief. [3]

OR

- Q2)** a) What is reverberation? Give Sabine's formula for reberberation time. What are the factors affecting reberberation time? Explain how it can be optimized by controling these factors. [6]
- b) Calculate the length of an iron rod which can be used to produce ultrasonic waves of frequency 20 kHz Given, Young's modulus of iron $1.16 \times 10^{11} \text{ N/m}^2$. Density of iron = $7.23 \times 10^3 \text{ kg/m}^3$ [3]
- c) The resultant amplitude of a wave when monochromatic light is diffracted from a single slit $E_\theta = E_m (\sin \alpha)/\alpha$, specify the terms involved and derive condition of minima. [3]

P.T.O.

- Q3)** a) What are retardation plates? Give their types? Derive the expression for thickness for any one of them. [6]
- b) Define the following: [3]
- Stimulated emission
 - Metastable State
 - Population Inversion.
- c) Calculate the band gap energy (in eV) in silicon, given that it is transparent to radiation of wavelength greater than 11000 AU.
 $h : 6.63 \times 10^{-34} \text{ J-sec}$, $c = 3 \times 10^8 \text{ m/s}$ [3]

OR

- Q4)** a) Explain the working of P-N junction diode in [6]
- Zero bias
 - Forward Bias
 - Reverse Bias
- On the basis of energy level diagram.
- b) The Hall coefficient of a specimen of doped silicon is found to be $3.66 \times 10^{-3} \text{ m}^3/\text{C}$. The resistivity of the specimen is $8.93 \Omega\text{-m}$. Determine the mobility of charge carriers. [3]
- c) What is an optical resonator? What is its role in lasing? [3]

- Q5)** a) State and explain Heisenberg's Uncertainty Principle. Show that it is also applicable for energy and time. [6]
- b) State and explain de-Broglie hypothesis of matter waves. Explain in brief any two properties of matter waves. [4]
- c) Lowest energy of an electron trapped in an infinite potential well is 38 eV. Calculate the width of the well. ($e = 1.6 \times 10^{-19} \text{ C}$, $h = 6.63 \times 10^{-34} \text{ J-sec}$, $m_e = 9.1 \times 10^{-31} \text{ kg}$) [3]

OR

- Q6)** a) Starting from de-Broglie hypothesis, derive Schrödinger's time independent wave equation. [6]
b) Explain tunneling effect. How is this principle used in a tunnel diode. [4]
c) Calculate the de-Broglie wavelength for a 10 KeV proton. [3]
($m_p = 1.67 \times 10^{-27} \text{ kg}$, $\hbar = 6.63 \times 10^{-34} \text{ J.s}$, $e = 1.6 \times 10^{-19} \text{ C}$).

- Q7)** a) Explain the following terms of superconductivity with the help of necessary figure. Give formula and graph wherever necessary. [6]
i) Meissner effect
ii) Critical Magnetic Field
b) Give brief explanation of the optical properties of nanoparticles with the help of quantum confinement effect and G Mie equation. [4]
c) Explain the formation of Cooper pairs in superconductors with the help of electron phonon interaction. [3]

OR

- Q8)** a) Explain chemical method for synthesis of nanoparticles by colloidal route with the help of LaMer diagram. Give one example of synthesis of metal nanoparticles. [6]
b) Give the statement of Meissner effect and show that super conductors are perfectly diamagnetic. [4]
c) Explain the Mechanical properties of Nanoparticles [3]



Total No. of Questions : 8]

SEAT No. :

P4403

[Total No. of Pages : 3

[5458]-110

F.E.

ENGINEERING GRAPHICS - I (2015 Pattern)

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4 , Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn, wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of electronic pocket calculator is allowed.
- 5) Assume suitable data, if necessary.

Q1) The point M of line MN is in HP while its other end N is 50 mm above HP and 80 mm in front of VP. The line is inclined to VP at an angle of 30° . Draw the projections of a line if its elevation makes 29° with HP. Find true length of line and the inclination made by the line with HP. Also, locate the traces of line. [12]

OR

Q2) Pentagonal plate of 25 mm side has one of its side in the VP & parallel to HP. The surface of plate makes an angle of 30° with VP. Draw its projections & find inclination of plate with HP. [12]

Q3) A square prism, side of base 40 mm and height 80 mm is kept on the HP on one of its corner of base edge in such a way that its axis makes an angle of 35° to the HP and VP. Draw the projection of the prism. [13]

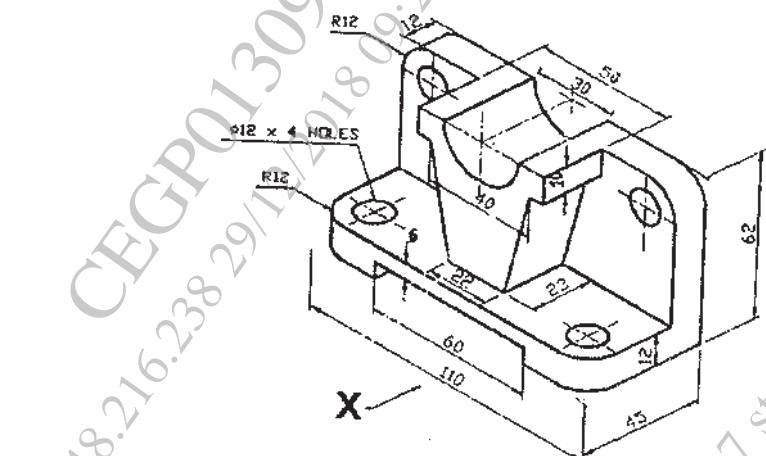
OR

Q4) a) Draw a parabola by focus directrix method if focus is 60 mm from directrix. [7]
b) Draw the development of hexagonal prism with base side 25 mm and axis height 60 mm. [6]

P.T.O.

Q5) Figure shows isometric view of a shaft support. Draw following views:[13]

- Front View looking in the direction of X.
- Top View.
- Sectional Right hand side view, section along line of symmetry.
- Show all dimensions.



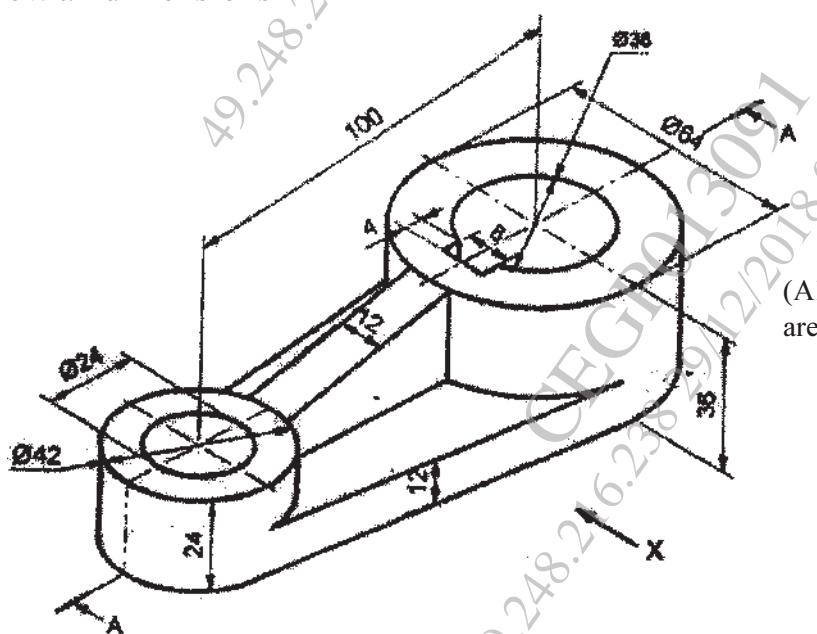
(All dimensions are in mm)

OR

Q6) Figure shows isometric view of a Machine component. Draw following views:

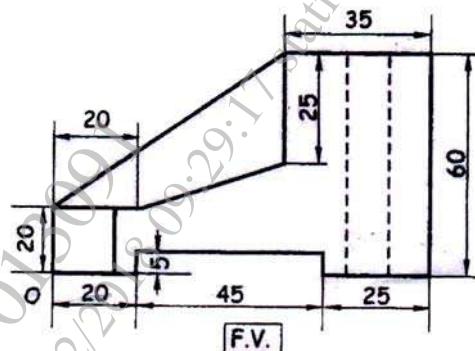
[13]

- Sectional Front View looking in the direction of X (Section A-A)
- Top View
- Left hand side view
- Show all dimensions

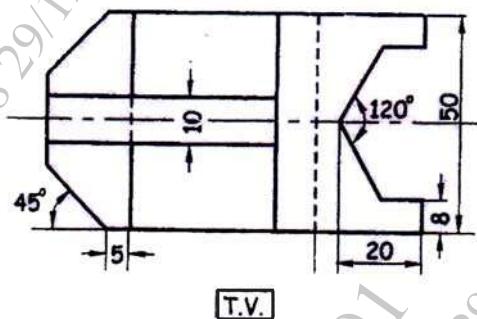


(All dimensions
are in mm.)

Q7) Figure shows front view & top view of object, Draw isometric view & show overall dimensions. [12]



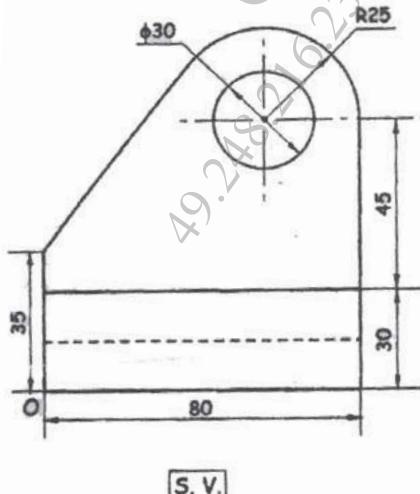
(All dimensions are in mm.)



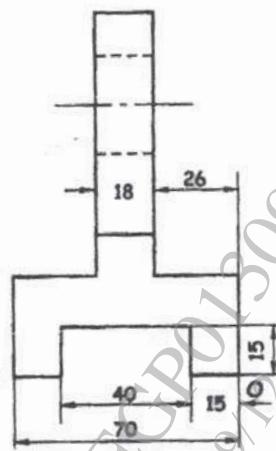
[T.V.]

OR

Q8) Figure shows front view & right hand side view of object, Draw isometric view & show overall dimensions. [12]



[S.V.]



[F.V.]

(All dimensions are in mm.)



Total No. of Questions—8]

[Total No. of Printed Pages—4

Seat No.	
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[5667]-110

F.E. EXAMINATION, 2019

ENGINEERING GRAPHICS—I

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Solve Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8.

- (ii) Use only half imperial size drawing sheet as answer book.
(iii) Retain all construction lines.
(iv) Assume suitable data, if necessary.

1. A line AB having its end point A is 15 mm above HP and 90 mm in front of VP, while point B is 50 mm above HP and 30 mm in front of VP. Draw the projections of the line if the projector distance between the point A and B is 80 mm. Find the Angle made by the line with HP and VP, Angle made of elevation line and plan line with HP and VP and true length, elevation length and plan length of the line. [12]

Or

2. A rectangular plate, 50 mm \times 75 mm, is resting in HP on its smaller side. Its surface is inclined to HP at an angle of 40° , draw the projections, if its resting side is inclined to VP at an angle of 20° . Find the inclination made by the plane with VP. [12]

P.T.O.

3. A cube of 60 mm long edges is held on one of its corners on HP in such a way that one of its solid diagonal is parallel to HP and perpendicular to the VP. Draw the projections of the cube. [13]

Or

4. (a) Construct a Parabola by using rectangular method having base length 100 mm and axis height 80 mm. [7]
(b) Draw the development of lateral surface for a hexagonal prism having a base edge 52 mm and axis height is 100 mm. [6]
5. Figure 1 shows a pictorial view of an object. By using first angle projection method. [13]

Draw :

- (i) Sectional front view along the cutting plane line A-A
(ii) Top View
(iii) Left Hand Side View (LHSV).

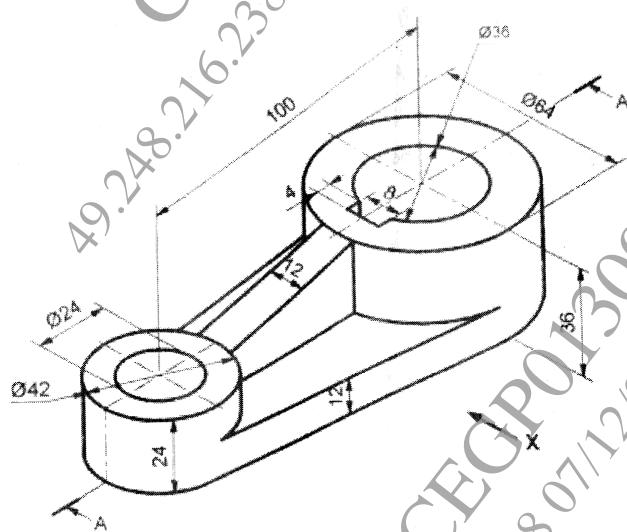


Figure 1

6. Figure 2, shows a pictorial view of an object. By using first angle projection method [13]

Draw :

- (i) Front view in the X direction
- (ii) Top View
- (iii) Left Hand Side View (LHSV).

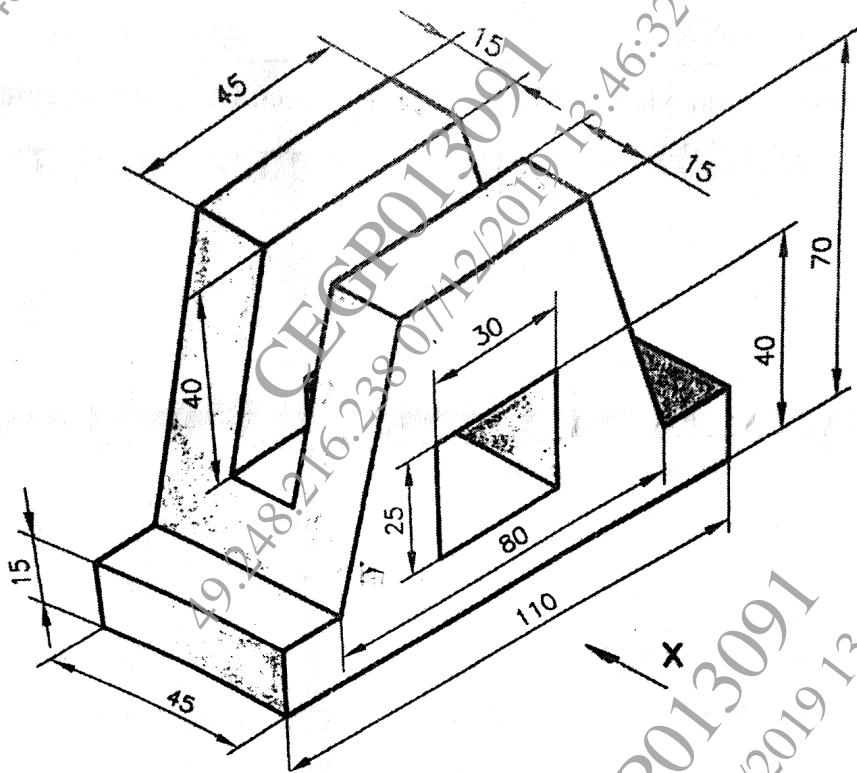
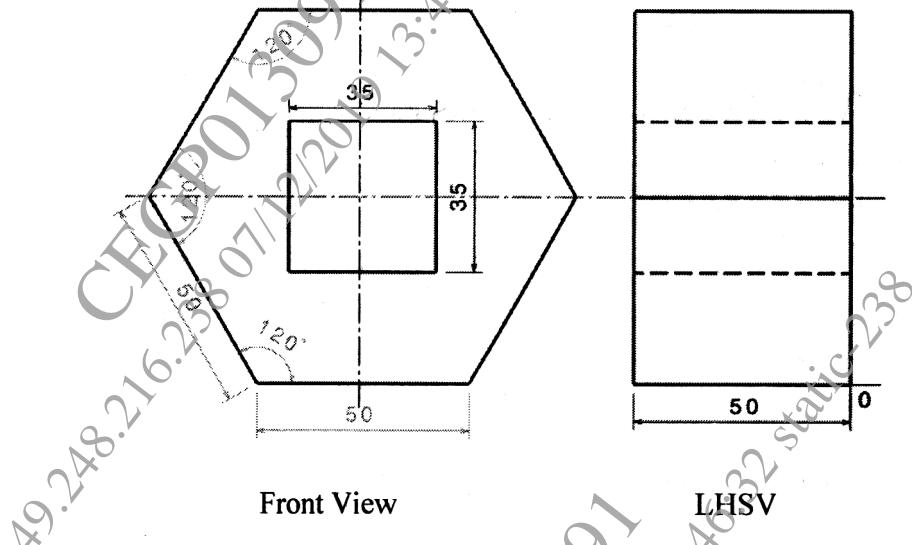


Figure 2

7. Figure 3 shows the Front view and Left hand side view of an object. Draw its Isometric view. [12]



Front View

LHSV

Figure 3

Or

8. Figure 4 shows the Front view and Top view of an object. Draw its Isometric view. [12]

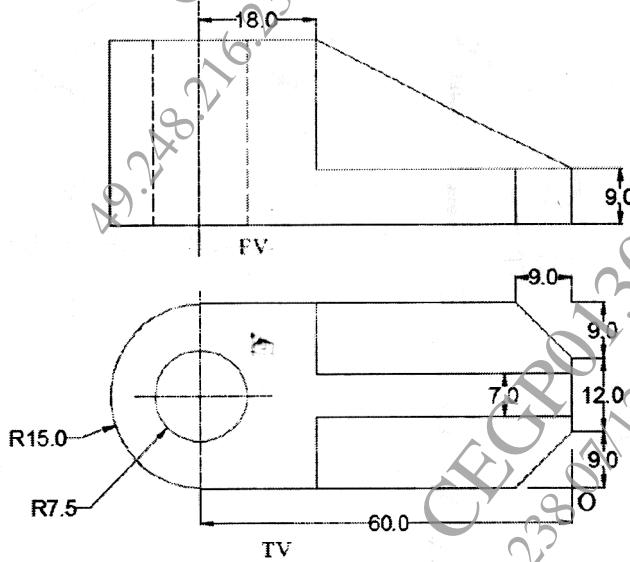


Figure 4

Total No. of Questions : 8]

SEAT No. :

P6996

[Total No. of Pages : 3

[5868]-116

F.Y. Engineering (Semester - I & II)
ENGINEERING GRAPHICS
(2019 Pattern) (102012)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

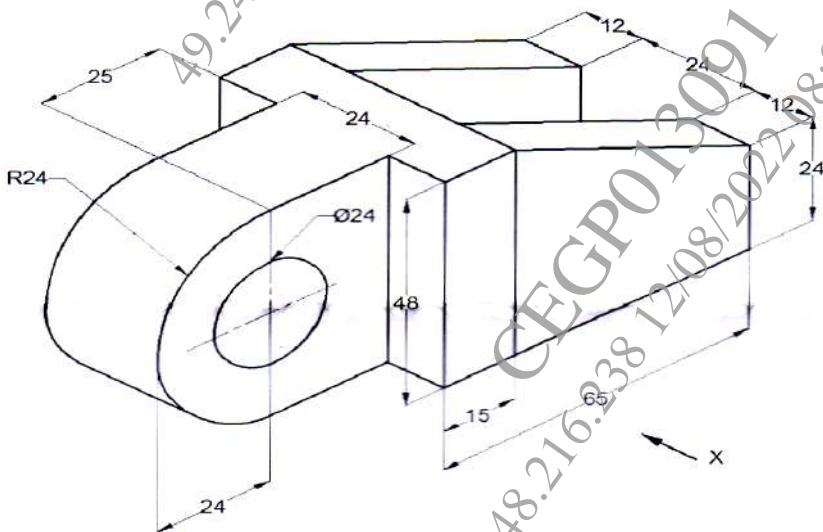
- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.
- 2) Assume suitable data, if necessary.
- 3) Retail all the construction lines.

Q1) Draw a curve traced out by a moving point in such a way that its distance from focus is 21 mm and eccentricity is $\frac{3}{5}$. [8]

OR

Q2) A straight rod AB of 60 mm length revolves one complete revolution with a uniform motion in a clockwise direction when hinged about A. During this period a point P moves along the rod from B to A and reaches back to B with a uniform linear motion. Draw the locus of point P. Name the Curve. [8]

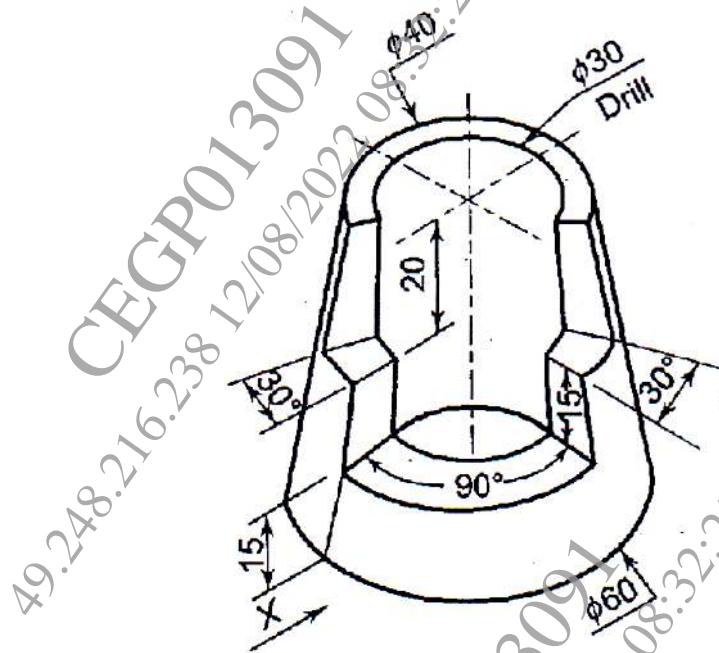
Q3) Figure shows a pictorial view of an object. By using first angle method of projection draw, Sectional Front View along symmetry looking in the direction of X. Top View and LHSV. Give dimensions in all views. [16]



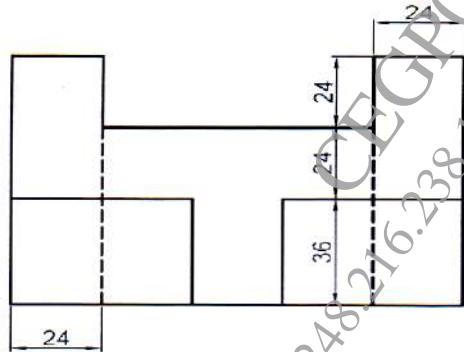
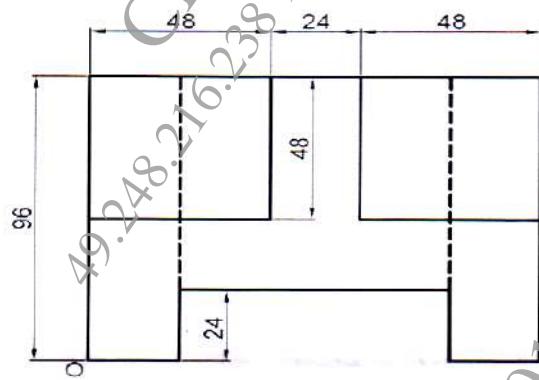
P.T.O.

OR

- Q4)** Figure shows a pictorial view of an object. By using first angle method of projection draw, Front View in the direction of X, Top View and RHSV. Give dimensions in all views. [16]

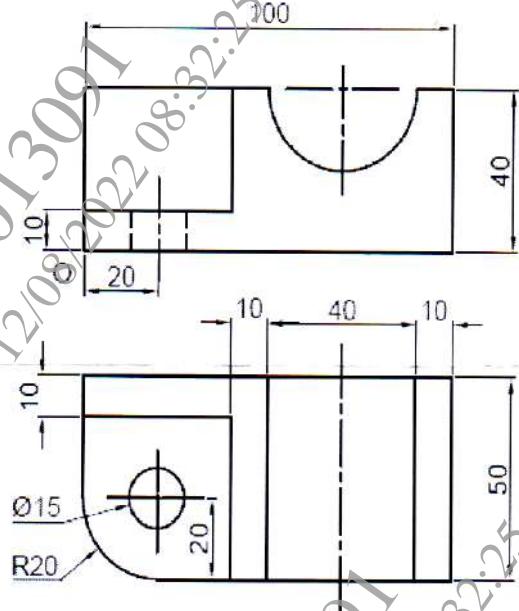


- Q5)** Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



OR

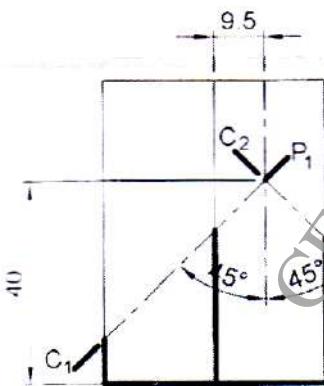
- Q6)** Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



- Q7)** A square pyramid edge of the base 40 mm axis length 70 mm stands with its base on HP with two sides of the base parallel to VP. It is cut by an AIP inclined at 60° to the HP and passing through a point on the axis 40 mm from base. Draw the development of surfaces of pyramid. [10]

OR

- Q8)** Figure shows the FV of a square prism, base side 30 mm and axis 60 mm long, resting on its base on HP such that each of its base edges are equally inclined to VP. The prism is cut by two cutting planes C₁-P₁ and C₂-P₂ as shown in figure. Draw the development of remaining surface of square Prism. [10]



PA-4293

[5924]-2

F.E. (Theory)

ENGINEERING GRAPHICS

(2019 Pattern) Semester - I/II) (102012)

Time : 2½ Hours]

Max. Marks : 50

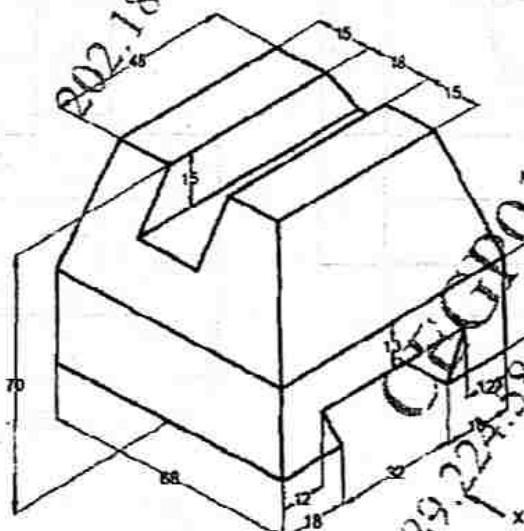
Instructions to the candidates:

- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Assume suitable data, if necessary.
- 3) Retain all the construction lines.

Q1) The throw of a ball from a fielder on a cricket ground reaches the wicket-keeper's gloves, following a parabolic path. Assuming the point of throw and the point of catch to be 1 meter above the ground, Maximum height achieved by the ball above the ground is 31 m. Draw the path of the ball if the radial distance between the fielder and the wicket-keeper is 75 m. Use suitable scale. [8]

Q2) Draw a helix of one convolution around a cylinder when its diameter 60 mm, height 130 mm and pitch is 20 mm. [8]

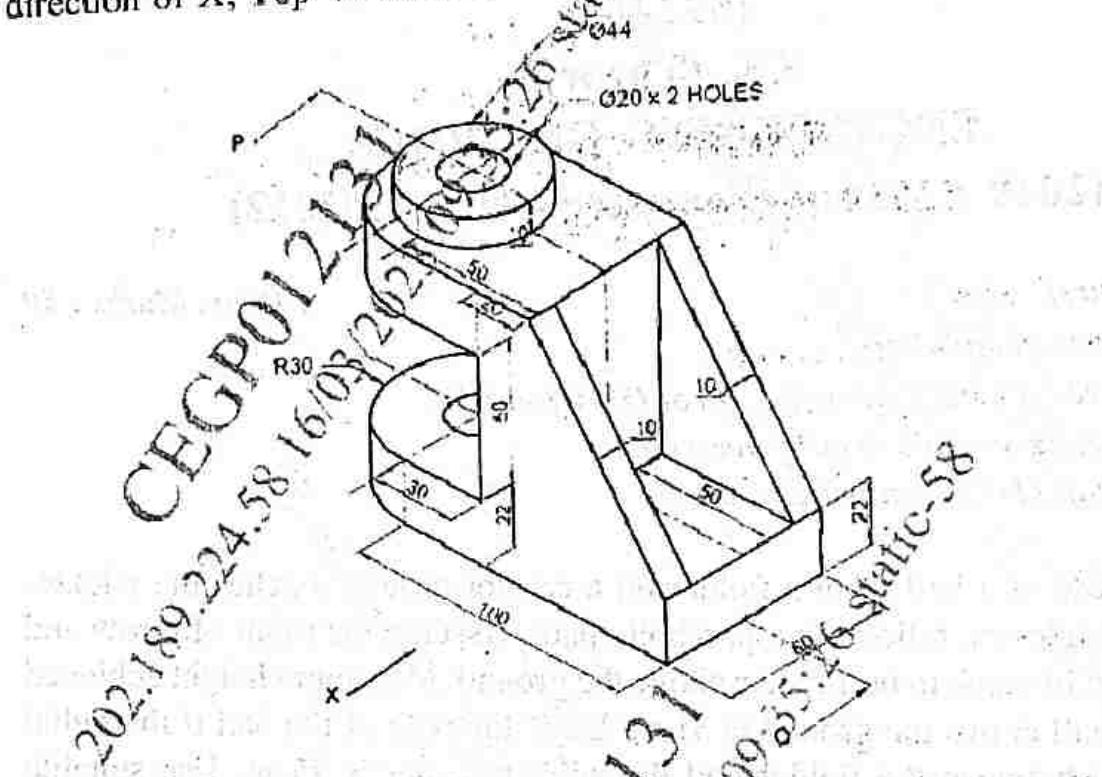
Q3) Figure shows a pictorial view of an object. By using first angle method of projection draw, Front View in the direction of X, Top View and L.H.S.V. Give dimensions in all views [8]



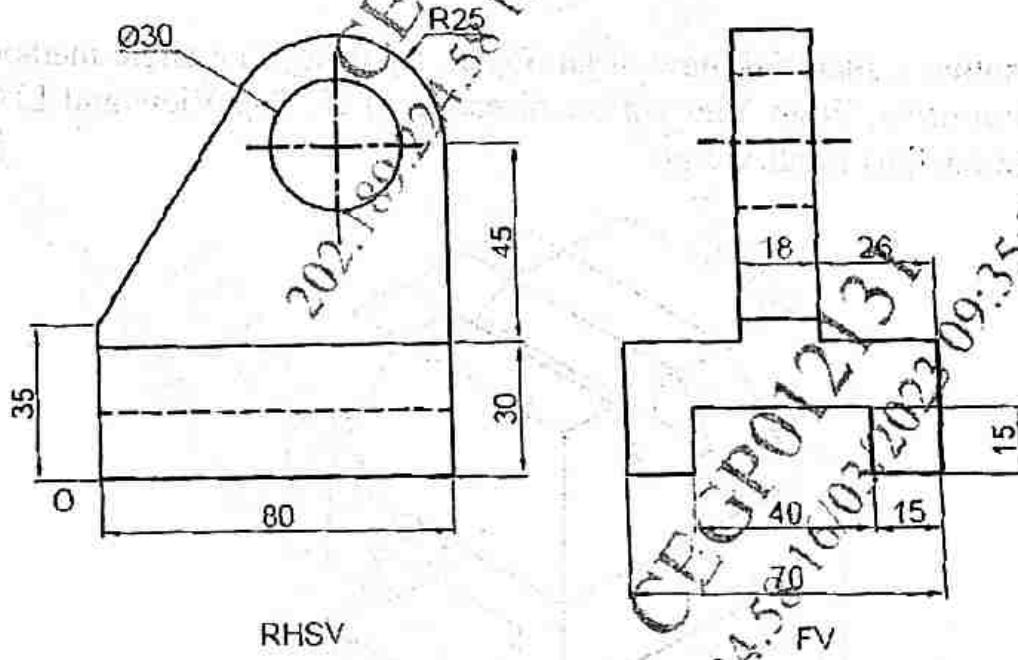
OR

P.T.O.

- Q4)** Figure shows a pictorial view of an object. By using first angle method of projection draw, Sectional Front View along section P-Q looking in the direction of X, Top View and RHSV. Give dimensions in all views. [16]

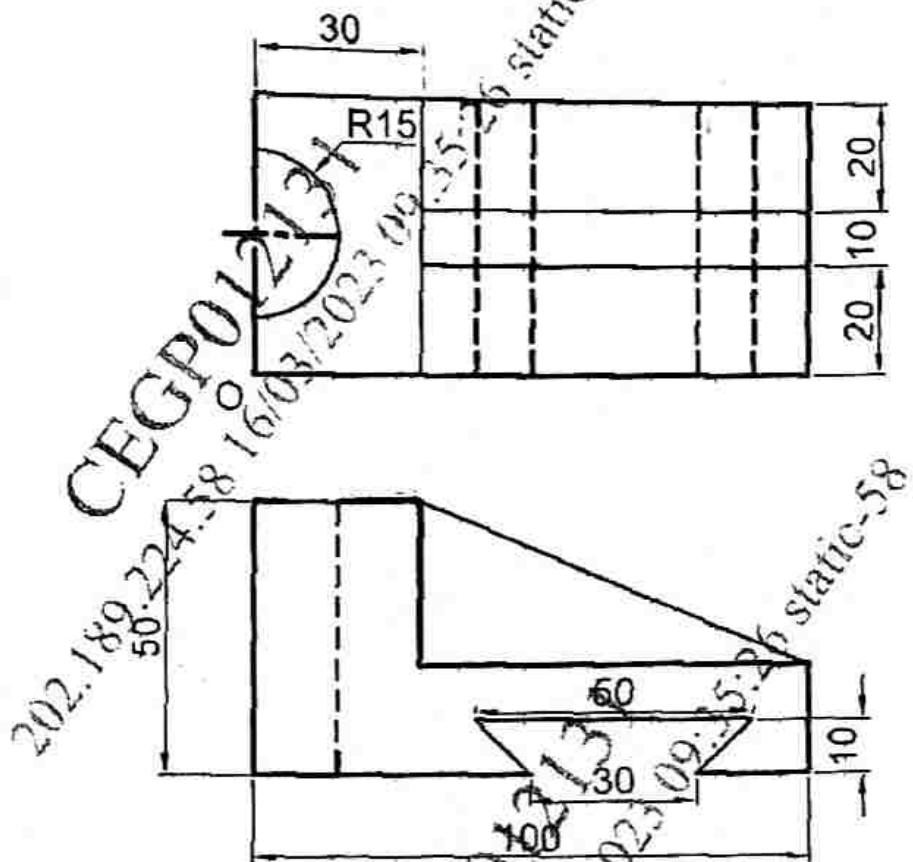


- Q5)** Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



OR

Q6) Figure show orthographic views of an object by first angle method of projection. Draw its isometric view and give all the dimensions. [16]



Q7) A right circular cone having diameter of base 40 mm and axis length 60 mm is resting on its base in HP. It is cut by an AIP inclined at 45° to HP and bisecting the axis. Draw the development of the lateral surface of the cone. [10]

OR

Q8) A pentagonal prism of base side 30 mm and axis length 70 mm, resting in HP such way that one of the base sides is parallel to VP and near to observer. Draw the development of lateral surface when section plane is inclined at 45° and bisects the axis of solid. [10]



Phase III
UNIVERSITY OF PUNE
[4361]-107
F. E. Examination - 2013
ENGINEERING GRAPHICS-I
(2012 Pattern)

[Total No. of Questions:]
[Time : 2 Hours]

[Total No. of Printed Pages :4]
[Max. Marks : 50]

- (1) Use only half imperial size drawing sheet as answer book.
(2) Retain all construction lines.
(3) Assume suitable data, if necessary.*

Q1 The point A of 65 mm long AB in HP and 15 mm in front of VP. The line [12] is inclined to HP and VP at 40° and 35° respectively. Draw the projections of line AB and locate its traces.

OR

Q2 An equilateral triangle of 60 mm side is resting in VP on one of its side. [12] Then its surface is inclined to VP at an angle of 40° . Draw the projections of plane, if the resting side is inclined to HP at an angle of 30° . Find the inclination made by plane with HP.

Q3 A square prism of base side 40 mm and axis height 60 mm is resting in [13] HP an one of its base corner. Then, it is tilted so that base surface is inclined to HP at an angle of 30° . Draw the projections, if the top view of the axis makes 30° with VP.

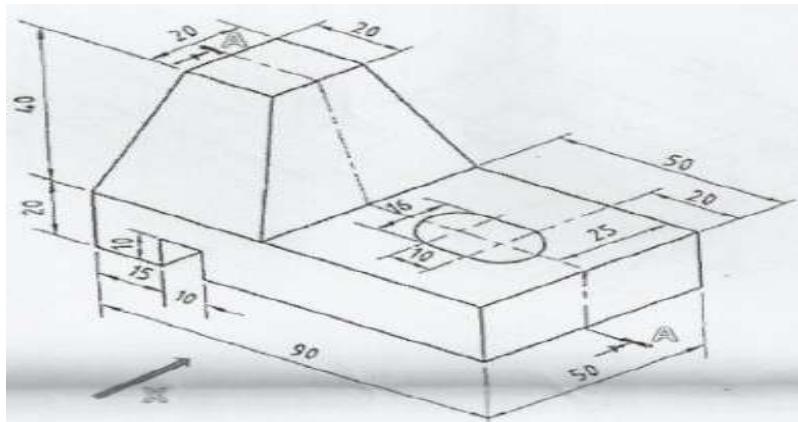
OR

Q4 a) Draw a cycloid of rolling circle of diameter 40 mm. [7]

b) Draw the development of lateral surface of pentagonal pyramid of base side 30mm and axis height 60 mm.

Q5 Figure 1 shows a pictorial view of an object. By using first angle method [13] of projections, draw:

- i. Sectional front view, along given section A-A [4]
- ii. Right hand side view [4]
- iii. Top view [4]
- iv. Dimensions [1]

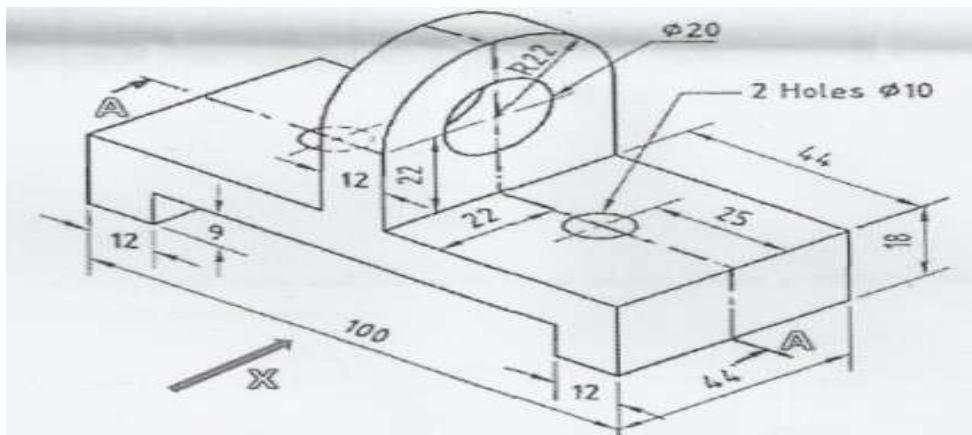


OR

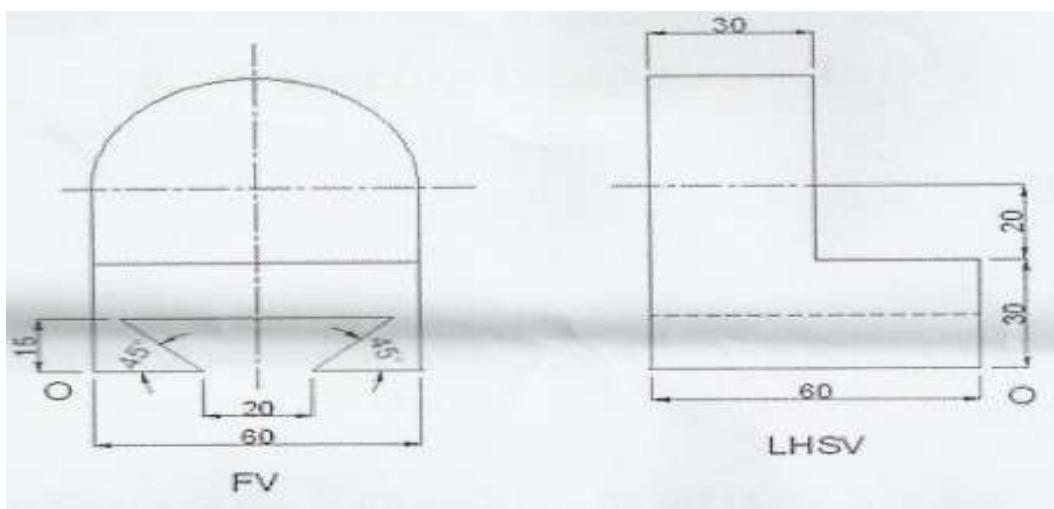
Q6 Figure 2 shows a pictorial view of an object. By using first angle method [13] of projections, draw;

- i. Sectional front view, along sectional plane A-A [4]

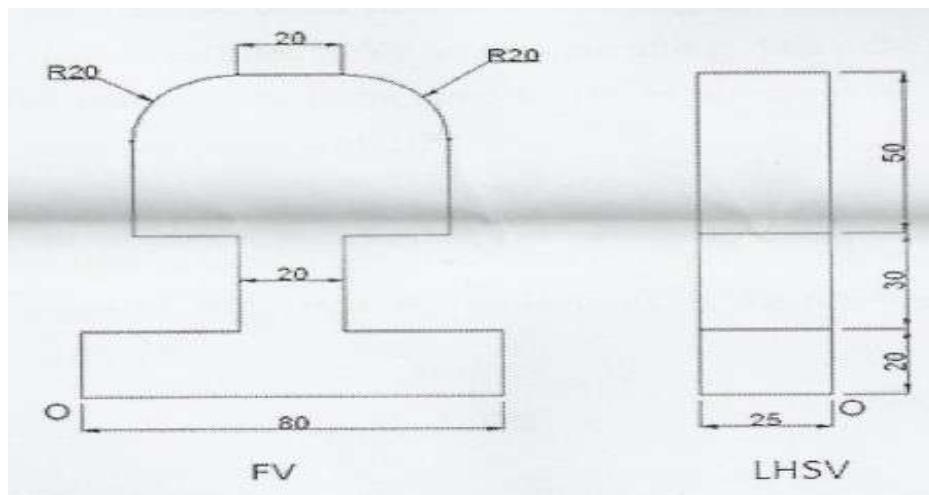
- ii. Right hand side view [4]
- iii. Top view [4]
- iv. Dimensions [1]



Q7 Figure 3 shows front view and end view of a bracket. Draw isometric view and show overall dimensions. [12]



Q8 Figure 4 shows front view and end view of an object. Draw isometric view and show overall dimensions. [12]



UNIVERSITY OF PUNE
[4361]-107
F. E. Examination- 2013
ENGINEERING GRAPHICS-I
(2012 Pattern)

[Time : 2 Hours] [Max. Marks : 50]

Total No. of Questions : 08

[Total No. of Printed Pages : 2]

Instructions :

- (1) Use only half imperial size drawing sheet as answer book.
- (2) Retain all construction lines.
- (3) Assume suitable data if necessary.

Q1) The point A of line AB is 15 mm above HP and is in VP. The front view and top view of line AB makes 40^0 and 35^0 with XY respectively. Draw the projections, if the projector distance between the end points of the line is 60 mm. Find the true length of line and true inclinations made by the line. Locate the traces. 12

OR

Q2) The point P of line PQ is in HP and 15 mm in front of VP. The top view of line PQ makes 40^0 with XY, while its plan measure 100 mm. Draw the projections if the true length of line is 112 mm. Find the true inclinations made by the line and locate the traces. 12

Q3) A circular lamina of diameter 60mm is resting in HP on one of its circumferential point. Then, its surface is inclined to HP at an angle of 45^0 . Draw the projections of lamina, if the top view of a diameter line passing through the resting point makes 35^0 with VP. Find the true inclination made by the lamina with VP. 13

OR

Q4) A triangle ABC [AB = 40mm, BC = 60 mm, and angle ABC = 90^0] is resting in VP on its side AB. Then its surface is inclined to VP in 13

such a way that the point C is 39 mm in front of VP. Draw the projections if the resting side is inclined at an angle of 20^0 with HP. Find the inclination made by the plane with HP.

- Q5) A cylinder of base diameter 60mm and axis height 80mm is resting in HP. Then, it is inclined to HP so that the generator passing through resting point is inclined to HP at an angle of 45^0 . Draw the projections, if the plane containing the axis makes 35^0 with VP. 13

OR

- Q6) A triangular prism, base side 50 mm and axis height 75 mm, is resting in HP on one of its base side. Then, it is inclined to HP in such a way that the base surface is inclined at an angle of 50^0 with HP. Draw the projections of solid, if the resting side is inclined at an angle of 45^0 with VP. 13

- Q7) A) Draw a parabola by focus-directrix method, if the distance of focus from the directrix is 80 mm. 06
B) Draw a helix of one revolution to a cylinder of base diameter 60mm and axis height 100mm. 06

OR

- Q8) A) Draw an ellipse by rectangular method, if the major and minor axes are 100 mm and 60 mm respectively. 06
B) Draw an involute of a circle with diameter 60mm. 06

Total No. of Questions : 8]

SEAT No. :

P1961

[Total No. of Pages : 4

F.E. (Semester - I)

ENGINEERING GRAPHICS - I

(2012 Pattern)

Time : 2 Hours]

[Max. Marks : 50]

Instructions:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8*
- 2) *Use only half imperial size drawing sheet as answer book.*
- 3) *Retain all construction lines.*
- 4) *Assume suitable data if necessary.*

Q1) The point M of line MN is in HP while its other end N is 50 mm above HP and 80 mm in front of VP. The line is inclined to VP at an angle of 40° . Draw the projections of a line if its elevation makes 29° with HP. Find true length of line and the inclination made by the line with HP. Also, locate the traces of line. **[12]**

Q2) An isosceles triangle, base 50 mm and altitude 80 mm, is resting in VP on its base. Its surface is inclined to VP so that the corner opposite to resting side is 50 mm in front of VP. Draw the projections if its resting side is inclined to HP at an angle of 45° . Find inclinations made by the plane with HP and VP. **[12]**

Q3) A square prism of base side 40 mm and axis height 80 mm is resting in HP on one of its base side. Then it is tilted so that the face contained by resting side is inclined to HP at 30° . Draw the projections, if its axis is inclined to VP at 40° . **[13]**

Q4) a) Draw a hyperbola by focus directrix method if focus is 50 mm from directrix and eccentricity is $3/2$. **[7]**
b) Draw the development of lateral surface of hexagonal prism of base side 30 mm and axis height 60 mm. **[6]**

Q5) Figure 1 shows a pictorial view of an object. By using first angle method of projections, draw; [13]

- i) Sectional front view, along symmetry of the object [4]
- ii) Right hand side view [4]
- iii) Top view [4]
- iv) Dimensions [1]

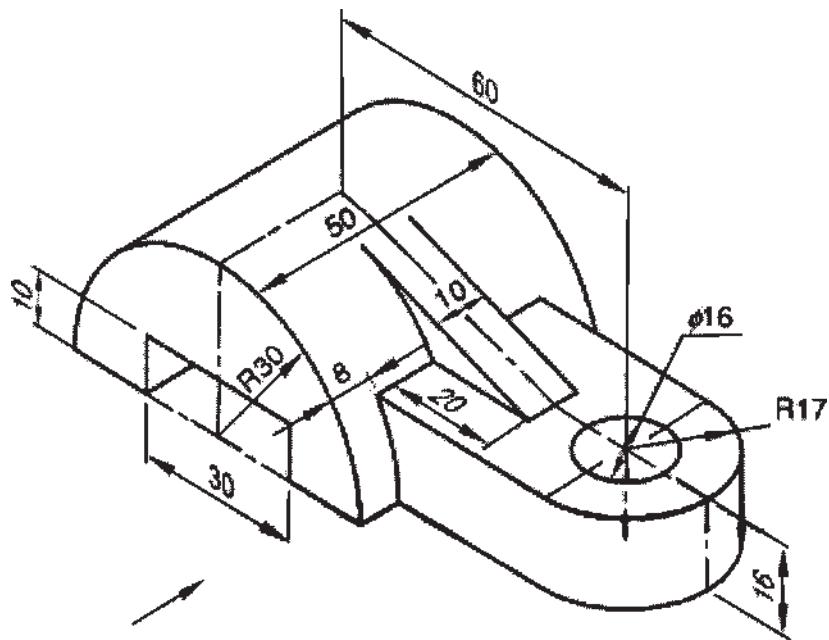


Figure 1

Q6) Figure 2 shows a pictorial view of an object. By using first angle method of projections, draw; [13]

- i) Sectional front view, along symmetry of the object [4]
- ii) Right hand side view [4]
- iii) Top view [4]
- iv) Dimensions [1]

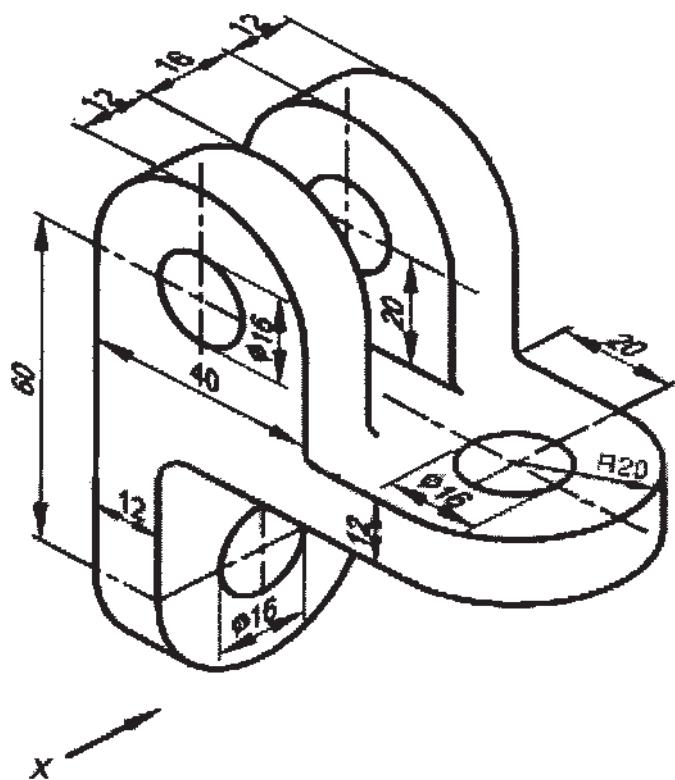


Figure 2

- Q7)** Figure 3 shows front view and end view of a bracket. Draw isometric view and show overall dimensions. [12]

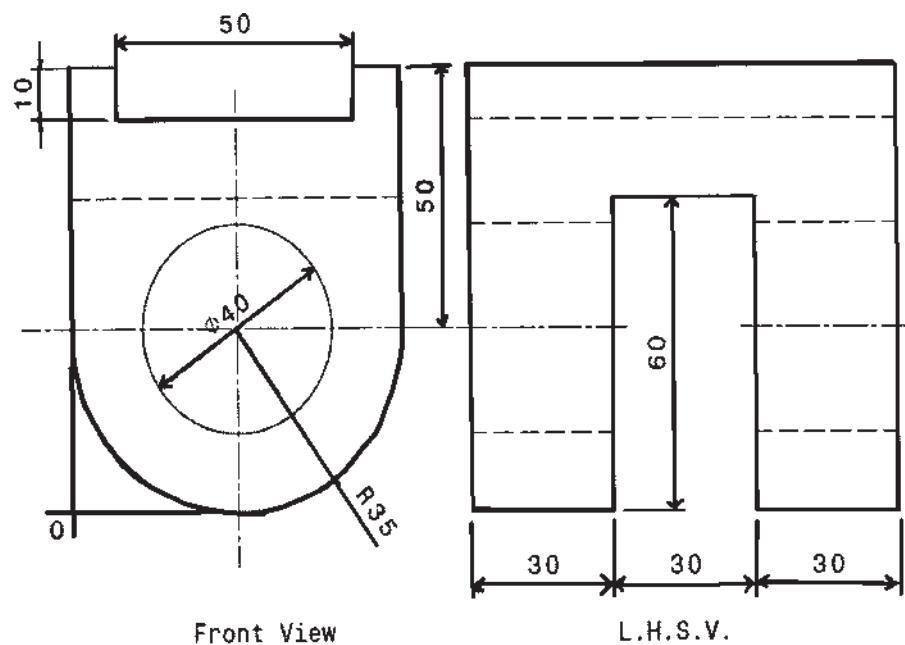


Figure 3

Q8) Figure 4 shows front view and end view of an object. Draw isometric view and show overall dimensions. [12]

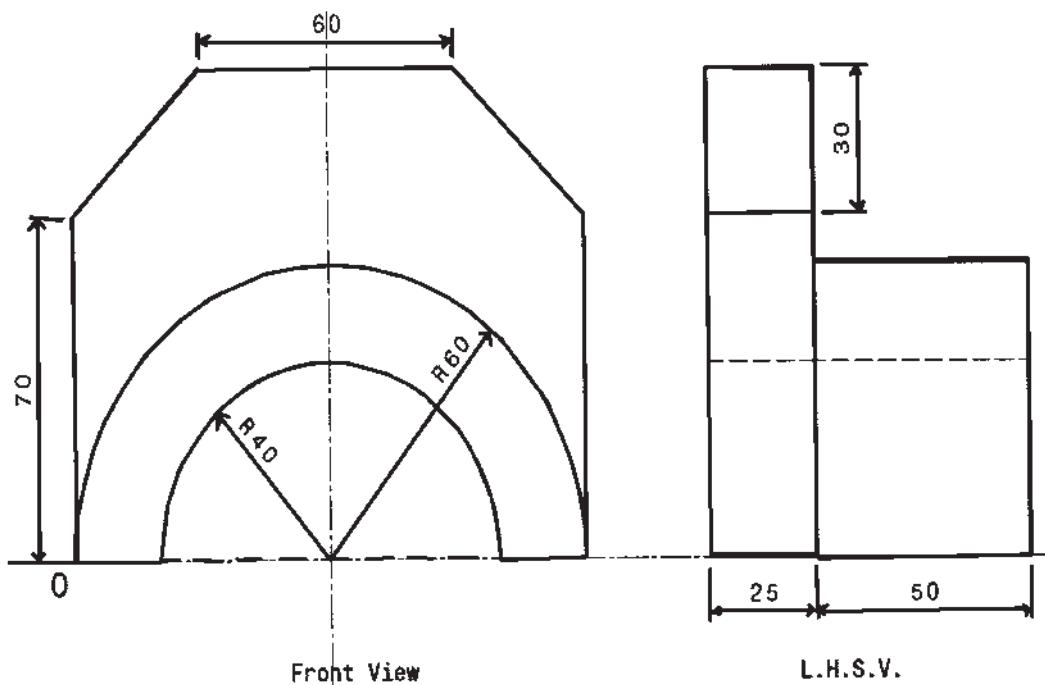


Figure 4



Total No. of Questions: 8]

[Total No. of Pages: 2

F. E. (Semester – I) Phase IV Examination, May/June 2015

Engineering Graphics – I

(2012 Pattern)

Time: 2 Hrs.]

[Max. Marks: 50

Instructions:

1. Use only half imperial size drawing sheet as answer book.
2. Retain all construction lines.
3. Assume suitable data if necessary.

Q.1 The point A of line AB is 15 mm above HP and is in VP. The front view and top view of line AB makes 40° and 35° with XY respectively. Draw the projections, if the projector distance between the end points of the line is 65 mm. Find the true length of line and true inclinations made by the line. Locate the traces. 12

OR

Q.2 The point P of line PQ is in HP and 15 mm in front of VP. The top view of line PQ makes 40° with XY, while its plan measures 80 mm. Draw the projections if the true length of line is 100 mm. Find the true inclinations made by the line and locate the traces. 12

Q.3 A circular lamina of diameter 60 mm is resting in HP on one of its circumferential point. Then, its surface is inclined to HP at an angle of 45° . Draw the projections of lamina, if the top view of a diameter line passing through the resting point makes 45° with VP. Find the true inclination made by the lamina with VP. 13

OR

- Q.4** A triangle ABC [AB = 40 mm, BC = 60 mm and angle ABC = 90°] is resting in VP on its side AB. Then its surface is inclined to VP in such a way that the point C is 40 mm in front of VP. Draw the projections if the resting side is inclined at an angle of 30° with HP. Find the inclination made by the plane with HP. 13
- Q.5** A cylinder of base diameter 60 mm and axis height 80 mm is resting in HP. Then, it is inclined to HP so that the generator passing through resting point is inclined to HP at an angle of 45°. Draw the projections, if the plane containing the axis makes 45° with VP. 13
- OR
- Q.6** A triangular prism, base side 50 mm and axis height 75 mm, is resting in HP on one of its base side. Then, it is inclined to HP in such a way that the base surface is inclined at an angle of 50° with HP. Draw the projections of solid, if the resting side is inclined at an angle of 45° with VP. 13
- Q.7** **A** Draw a parabola by focus-directrix method, if the distance of focus from the directrix is 70 mm. 6
- B** Draw a helix of one revolution to a cylinder of base diameter 60 mm and axis height 100 mm. 6
- OR
- Q.8** **A** Draw an ellipse by rectangular method, if the major and minor axes are 100 mm and 60 mm respectively. 6
- B** Draw a cycloid of rolling circle of diameter 42 mm. 6

Total No. of Questions—8]

[Total No. of Printed Pages—4+1

Seat No.	
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[4756]-105

F.E. (First Semester) EXAMINATION, 2015

ENGINEERING GRAPHICS-I

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.

- (ii) Figures to the right indicate full marks.
- (iii) Assume suitable data if necessary.
- (iv) Retain construction lines.
- (v) Marks are reserved for dimensioning and good presentation.

1. The TV of a 80 mm long line AB measures 50 mm. The point A is 50 mm in front of VP and 20 mm above HP. The point B is 20 mm in front of VP and is above HP. Draw the projection of line AB and find its inclination with the HP and VP also locate its traces. [12]

P.T.O.

Or

2. A thin rectangular plate of size 70 mm \times 40 mm appears as a square of side 40 mm in TV with one of its side inclined at 30° to VP and parallel to HP. Draw the projection of the plate and determine its inclination with HP. [12]
3. A pentagonal prism of base 30 mm side and axis 60 mm long is resting on a corner of its base on HP with a longer edge containing that corner inclined at 45° to the HP and vertical plane containing that edge and axis inclined at 30° to the VP. Draw its projection. [13]

Or

4. (a) Draw an involute of a circle of 50 mm diameter. [7]
- (b) A right circular cone of a base diameter 50 mm and axis height 60 mm has its base on HP. Draw the development of lateral surface of cone. [6]
5. The following Fig. 1 shows a Cast iron bracket. By using first angle projection method draw : [13]

(i) Front View

(ii) Top View

(iii) Sectional LHSV along plane X-X.

Give all the dimensions

[13]

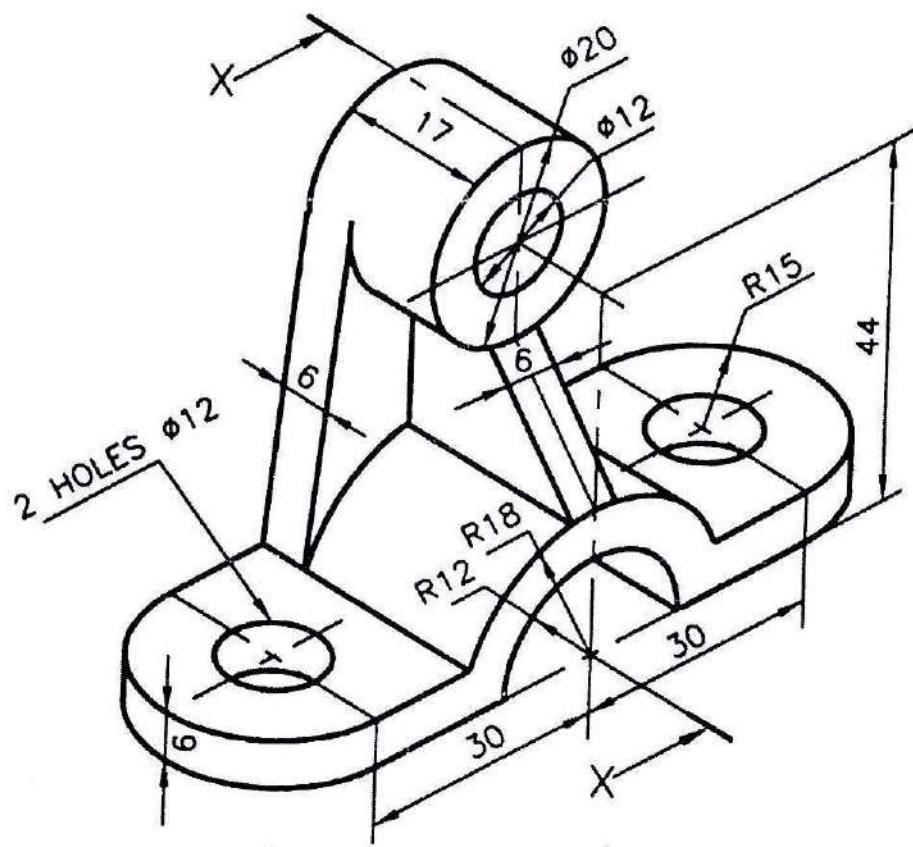


Fig. 1 C.I. Bracket

Or

6. The following Fig. 2 shows a cast iron bracket. By using first angle projection method, draw : [13]

(i) Sectional front view

(ii) Top view

(iii) RHSV

Give all the dimensions

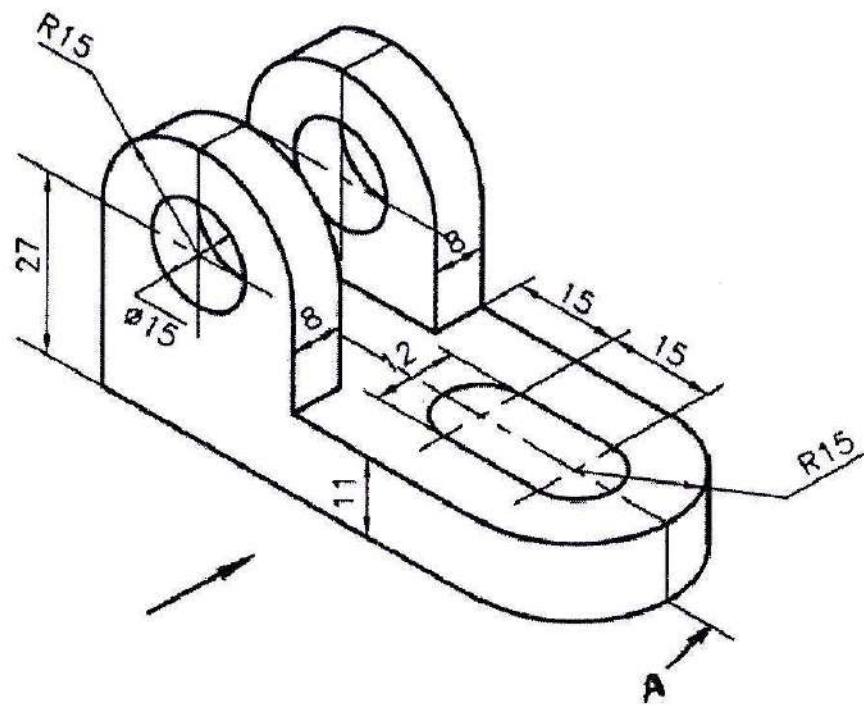


Fig. 2 C.I. Bracket

7. Fig. 3 shows the FV and LHSV of an object. Draw the isometric views using natural scale. [12]

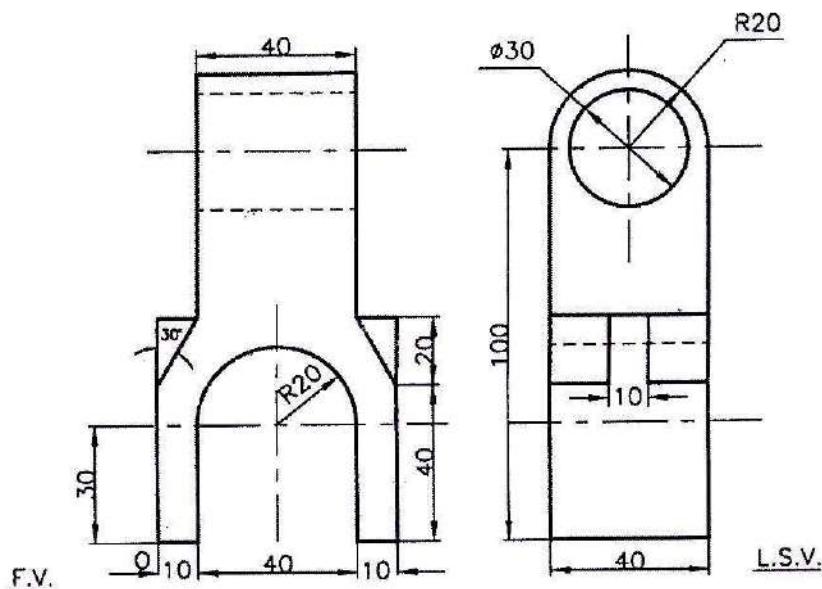


Fig. 3

Or

8. Fig. 4 shows the FV and RHSV of an object. Draw the isometric view using natural scale. [12]

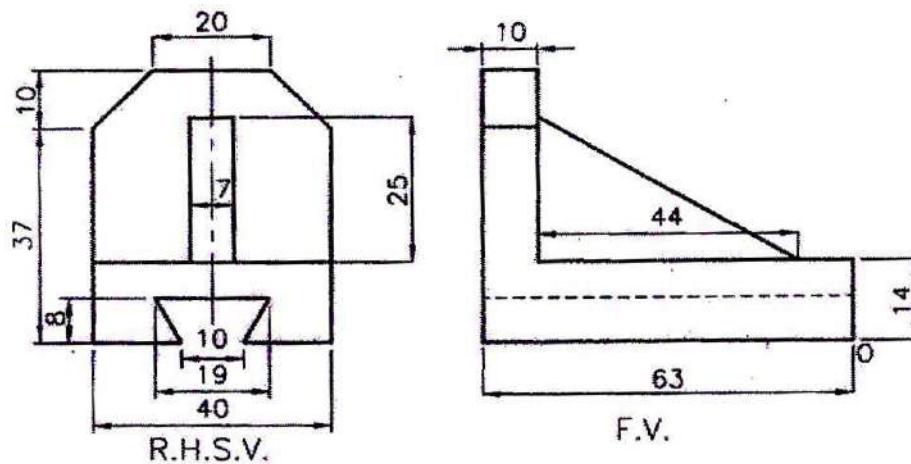


Fig. 4