

Total No. of printed pages = 3

CE 181103

Roll No. of candidate

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2018

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

(New Regulation) (w.e.f. 2017–2018)

(New Syllabus) (w.e.f. 2018–2019)

(Group-B)

Full Marks – 70

Time – Four hours

The figures in the margin indicate full marks
for the questions.

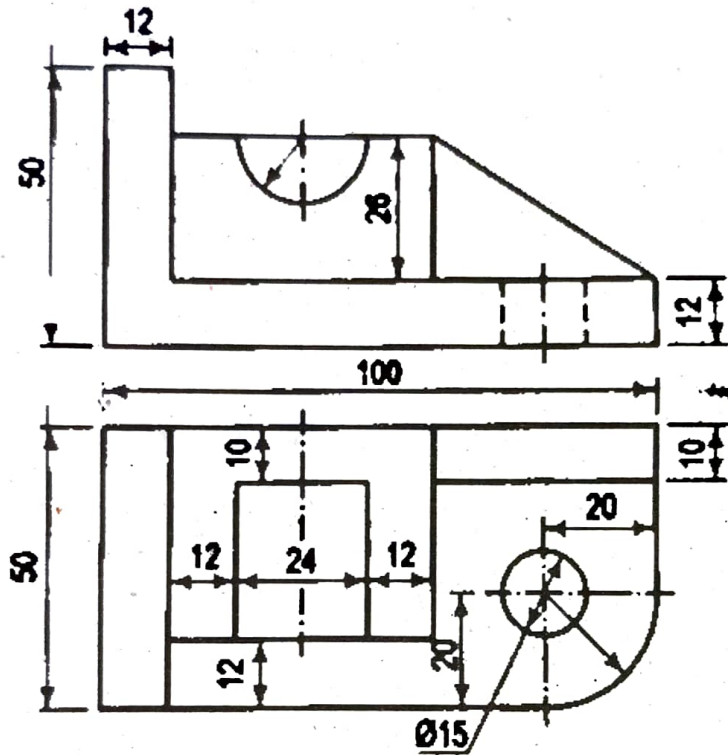
Answer Q.No. 1 is compulsory and any *five* from
remaining.

1. (a) Write freehand in single stroke capital letters of
12 mm height, the following sentence : (12)
“Lettering is generally done in capital letters”.
(b) Draw the projections of a point P is 25 mm
below the H.P and 35 mm behind the V.P. (8)
2. Construct a plain scale of R.F = $1/45$ to read yards
and feet and show 3 feet 2 yard and 4 feet 1 yard
on it. (10)

[Turn over

3. Two points P and Q are 100 mm apart. The point R is 75 mm from P and 60 mm from Q. Draw an ellipse passing through P, Q and R. (10)
4. Construct a hyperbola when the distance of the focus from the directrix is 80 mm and eccentricity is $\frac{4}{3}$. (10)
5. A line PQ, 65 mm long makes an angle 30° with the V.P and 45° with H.P. Its end P is 25 mm above the H.P and 20 mm in front of V.P. Draw the projections of the line. (10)
6. A regular hexagon of 30 mm side has one side on the ground. Its plane is inclined at 45° to the H.P and perpendicular to the V.P. Draw the projections of the hexagon. (10)
7. Draw the projections of a square pyramid having one of its triangular faces in the V.P and the axis parallel to and 40 mm above the H.P. The base of the pyramid is of 30 mm side and axis is 75 mm long. (10)
8. A triangular prism, base 30 mm side and axis 50 mm long is lying on the H.P on one of its rectangular faces with its axis inclined at 35° to the V.P. It is cut by a horizontal section plane, at a distance of 12 mm above the ground. Draw its front view and sectional top view. (10)

9. Draw the isometric view of model, front view and top view are shown below. (All dimensions are in millimetres) (10)



Total No. of printed pages = 6

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2019

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

**(New Regulation) (w.e.f. 2017-18) and
(New Syllabus) – (Group B) (w.e.f. 2018-19)**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the following :

(10 × 1 = 10)

(i) Representative Fraction (RF) is defined as

- (a) length of an object in the drawing / actual length of the object
- (b) length of an object in the drawing / isometric length the object
- (c) actual length of the object / length of an object in the drawing
- (d) isometric length the object / length of an object in the drawing

[Turn over

- (ii) A point 'P' in above H.P. and behind V.P. the point is in
- (a) 1st quadrant
 - (b) 2nd quadrant
 - (c) 3rd quadrant
 - (d) 4th quadrant
- (iii) When the line is parallel to V.P. and perpendicular to H.P. we can get its true length in
- (a) front view
 - (b) top view
 - (c) both top view and front view
 - (d) none
- (iv) A circle will appear on an isometric drawing as an
- (a) parabola
 - (b) cycloid
 - (c) ellipse
 - (d) circle
- (v) The isometric axes are inclined at _____ degree to each other.
- (a) 60
 - (b) 90
 - (c) 120
 - (d) 150

- (vi) A drawing instrument set usually contains all the following, except
- (a) low compass
 - (b) scale
 - (c) dividers
 - (d) extra leads
- (vii) Which of the following represent reducing scale?
- (a) 1:1
 - (b) 1:2
 - (c) 2:1
 - (d) 10:1
- (viii) Name the curve which has zero eccentricity.
- (a) ellipse
 - (b) parabola
 - (c) hyperbola
 - (d) circle
- (ix) If the front view of an object exhibits width and height, then what dimensions of an object are exhibited by a right side view
- (a) length and width
 - (b) length and height
 - (c) height and width
 - (d) length and breadth

(x) Planes which are inclined to both the horizontal and vertical planes are called

- (a) oblique planes
- (b) auxiliary planes
- (c) profile planes
- (d) none of these

2. (a) Write the sentence using capital letter
(ht = 2.5 cm) (7)

‘Long live AECSU’

(b) Construct a Vernier scale to read meters, decimeters and centimeters and long enough to measure upto 4m. R.F. of the scale in 1:20. Mark on your scale a distance of 2.28 m. (8)

3. (a) Draw the projections of the following points on the same ground line, keeping the projection 25 mm apart. (8)

P, 25 mm below the H.P. and
25 mm behind the V.P.

Q, 15 mm above the H.P. and
50 mm behind the V.P.

R, 40 mm below the H.P. and
25 mm in front of the V.P.

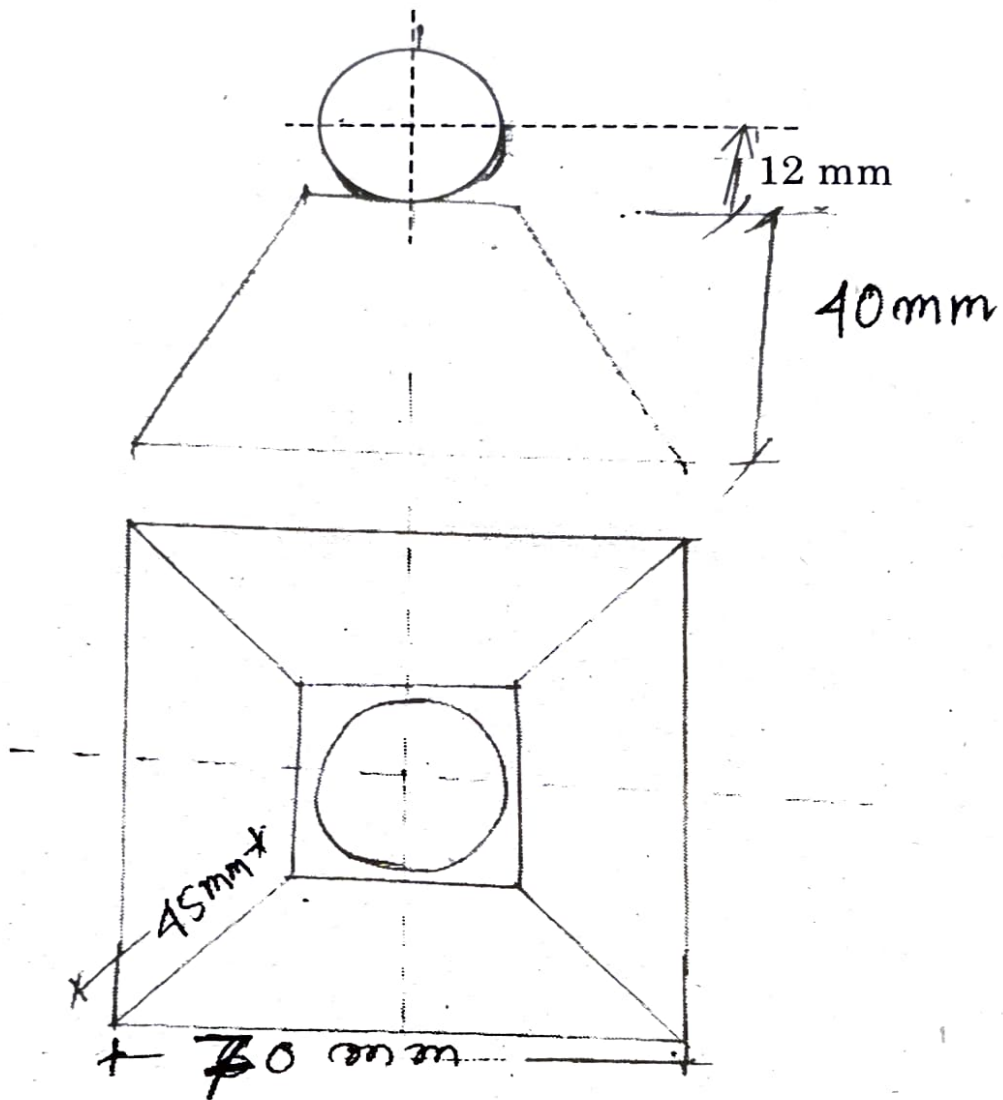
S, in both the H.P. and the V.P.

(b) A line MN, 50 mm long has its end M 25 mm above H.P. and 30 mm in front of V.P. The line is perpendicular to V.P. and parallel to H.P. Draw its projection. (7)

4. (a) Show by means of traces, each of the following planes : $(3 \times 2 = 6)$
- (i) perpendicular to the H.P. and the V.P.
 - (ii) perpendicular to the H.P. and inclined at 30° to the V.P.
 - (iii) parallel to and 40 mm away from the V.P.
- (b) A line PQ, 90 mm long, is inclined at 45° to the H.P. and its top view makes an angle of 60° with the V.P. The end P is in the H.P. and 12 mm in front of the V.P.
- Draw its front view and find its true inclination with the V.P. (9)
5. Draw an ellipse by “concentric circle method” and find the length of the minor axis with the help of the following data : (15)
- (a) Major axes = 100 mm
 - (b) Distance between foci 80 mm.
6. A square plate of side 60 mm is held on a corner on H.P. with a diagonal horizontal and inclined at 45° to V.P. The plate is seen as a Rhombus in a plane with other diagonal measured at 30 mm. Draw the projection of plate and determine the angle with which it makes with H.P. (15)
7. (a) Draw the projections of a square pyramid, side of base 30 mm and axis is 60 mm long. The pyramid is 15 mm above H.P. and 15 mm behind V.P. with its axis vertical and two sides of its base parallel to V.P. (7)

(b) Draw the isometric view.

(8)



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2021

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

(New Regulation w.e.f. 2017-18)

(New Syllabus – (Group-B) w.e.f. 2018-19)

Full Marks – 70

Time – Four hours

The figures in the margin indicate full marks
for the questions.

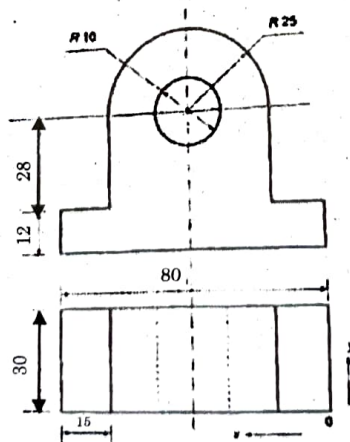
Answer question No. 1 and any *four* from the rest.

1. Answer the following : (10 × 1 = 10)
- (i) A diagonal scale is used when measurements are required in.
 - (a) One unit
 - (b) Two unit
 - (c) Three units
 - (d) None of above
 - (ii) The eccentricity of the conic section is defined as
 - (a) Distance of the point from the focus/distance of point from directrix
 - (b) Distance of point from directrix/distance of point from focus
 - (c) Distance of point from tangent/distance of point from focus
 - (d) Distance of point from vertex/distance of point from focus
 - (iii) The curves generated by a fixed point on the circumference of the a circle, which rolls without slipping along a fixed straight line or a circle is called
 - (a) Cycloid
 - (b) Trochoid
 - (c) Hypocycloid
 - (d) Epicycloid

[Turn over

- (iv) The front view is above XY and top view is below XY, the projection is
 - (a) First angle projection
 - (b) Second angle projection
 - (c) Third angle projection
 - (d) Fourth angle projection
- (v) The true length of line can be determined when the line is
 - (a) Perpendicular to a plane
 - (b) Parallel to a plane
 - (c) Inclined to a plane
 - (d) None of above
- (vi) In AUTOCAD polyline is combination of lines made from
 - (a) Series of individual lines
 - (b) Straight line
 - (c) Curve
 - (d) Point
- (vii) In AUTOCAD, the relative coordinate is the coordinate of next point of line given with reference to
 - (a) first point
 - (b) previous point
 - (c) origin
 - (d) none of above
- (viii) In AUTOCAD drawing, Circle can be drawn using
 - (a) Center point and radius
 - (b) Three points given on circumferences
 - (c) Tangent, tangent and radius method
 - (d) All of above
- (ix) To draw area bounded by equal, straight lines
 - (a) Polygon command is used
 - (b) Rectangle command is used
 - (c) Square command is used
 - (d) Circle command is used
- (x) Mirror command is used to
 - (a) Draw a similar object to other half
 - (b) Copy a object
 - (c) Erase a object
 - (d) None of above

2. (a) Write freehand in single-stroke capital letters of 12 mm height, the following sentence:
 "HIDDEN EDGES ARE SHOWN BY DASHED LINE" (7)
 (b) Draw a vernier scale of R.F=1/40 to read upto 4 m and show lengths representing 2.39 m and 0.91m. (8)
3. (a) Construct a parabola when the distance of the focus from directrix is 50mm. (7)
 (b) A line AB, 65 m long, has its end A 20 mm above the HP and 25 m in front of the VP. The end B is 40 mm above the HP and 65 mm in front of the VP. Draw the proection of AB abd show its inclinations with the HP and the VP. (8)
4. (a) A regular pentagon of 25 m has one side on the ground. Its plane is inclined at 45° to the HP and perpendicular to the VP. Draw the projections. (7)
 (b) A hexagonal pyramid, base 25 mm side and axis 50 mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to V.P. Draw its projection. (8)
5. Draw the projections of a circle of 50 mm diameter resting in the HP on a point A on the circumferences; its plane inclined 45° to the HP and the top view of the diameter AB making 30° angle with the VP. (15)
6. A square pyramid, base 40 m side and axis 65 mm long, has its base in the VP. One edge of the base is inclined at 30° to the HP. Draw its projections. (15)
7. Draw isometric view of model, two views are shown below. (15)



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2022

B.Tech 1st Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

(New Regulation (w.e.f. 2017-18)) &

(New Syllabus (Group - B) w.e.f. 2018-19))

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the following :

(10 × 1 = 10)

(i) Representative fraction is

- (a) Length in drawing/ Actual length
- (b) Actual length/Length in drawing
- (c) Larger length/smaller length
- (d) None of above

(ii) The eccentricity of the conic section is defined as

- (a) Distance of the point from the focus/distance of point from directrix
- (b) Distance of point from directrix/distance of point from focus
- (c) Distance of point from tangent/distance of point from focus
- (d) Distance of point from vertex/distance of point from focus

(iii) The true area of plate can be determined when the plate is

- (a) Parallel to a plane
- (b) Inclined to a plane
- (c) Perpendicular to a plane
- (d) None of above

(iv) An isometric projection is

- (a) Three dimensional view
- (b) Projected view
- (c) Bird eye view
- (d) All of above

[Turn over

- (v) An traces can not be drawn if
 - (a) Plane is perpendicular to reference plane
 - (b) Plane is on the reference plane
 - (c) Plane is parallel to reference plane
 - (d) All of above
 - (vi) AUTOCAD is developed by
 - (a) Microsoft Corporation
 - (b) Apple Inc.
 - (c) AUTODESK Inc.
 - (d) None of above
 - (vii) In AUTOCAD drawing, Circle can be drawn using
 - (a) Center point and radius
 - (b) Three points given on circumferences
 - (c) Tangent, tangent and radius method
 - (d) All of above
 - (viii) Mirror command is used to
 - (a) Draw a similar object to other half
 - (b) Copy a object
 - (c) Erase a object
 - (d) None of above
 - (ix) To obtain parallel line and parallel curve _____ command is used
 - (a) Copy
 - (b) Fillet
 - (c) Offset
 - (d) None of above
 - (x) Which of the file extension can not open in AUTOCAD
 - (a) dwg
 - (b) dxf
 - (c) doc
 - (d) dws
2. (a) Write freehand in single-stroke inclined capital letters of 12 mm height, the following sentence: "DIMENSION LINES ARE CONTINUOUS THIN LINES". (6)
- (b) An area of 225 sq cm on a map represents an area of 49 sq km on the field. Find the RF of the scale of this map and draw a diagonal scale to show kilometers, hectometers and decameters and to measure up to 10 km. Indicate on the scale a distance of 7.36 kilometers. (9)

3. (a) Construct a hypocycloid rolling circle of 50 mm diameter and directing circle of 175 mm diameter. Draw a tangent to it at a point 50 mm from the centre of the directing circle. (10)
- (b) A point P is 20 mm below H.P and lies in the third quadrant. Its shortest distance from xy is 40 mm. Draw its projection. (5)
4. (a) A line AB, 75 mm long has its end A 20 mm above the HP and 25mm in front of VP. The end B is 40mm above the HP and 65 mm in front of the VP. Draw the projections of AB and show its inclination with the HP and the VP. (8)
- (b) A regular hexagon of 20mm side has one side on the ground. Its plane is inclined 40° to the H.P. and perpendicular to the V.P. draw its projections. (7)
5. A hexagonal prism, base 30 mm side and axis 75 mm long, has an edge of the base parallel to the H.P. and inclined at 45° to the V.P. Its axis makes an angle of 60° with the H.P. Draw its projection. (15)
6. Draw isometric view of model, two views are shown below.

