(Printed Pages 4)

Roll No.....

E-833

B.E. First Semester (Main Exam.) Examination, Dec.-2018

Engineering Graphics & Design (BME101/BME 201)

BE (ECE, EEE, & CSE)

Time : Three Hours] *[Maximum Marks : 60*

Note : Attempt **all** questions of **Section-A**, **four** from **Section-B** and **three** questions from **Section-C.**

Section-A

1×10=10

1. (i) Which grade of pencil is used for drawing arrowheads?

(a) 2H (b) 2B

(c) 7H (d) H

(ii) Guidelines for dimensions at international level on a drawing is controlled by _____

(a) Bureau of Indian Standards, (b) Corporate drafting standards,

(c) ANSI (d) ISO

(iii) What are non-parallel and non-intersecting lines called?

(a) Spiral lines (b) Parallel lines,

(c) Skew lines (d) Perpendicular lines

(iv) If a thin set square is kept perpendicular to both the horizontal and vertical planes, its true shapes seen in-

(a) HP line (b) VP

(c) Auxiliary Inclined plane (d) Profile plane

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(v) A cube is resting on HP with a solid diagonal perpendicular to it. The top view will appear as-

(a) Square (b) Rectangle

(c) Irregular hexagon (d) Regular hexagon

(vi) A triangular prism resting on a rectangular face in the HP. It is cut by a horizontal plane, Its sectional top view is

(a) Equilateral triangle (b) Isosceles triangle

(c) Rectangle (d) None of these

(vii) Radial line method of development is used to develop the surface of

(a) Pyramid (b) Cone

(c) Cylinder (d) All of these

(viii) A rectangle of 120mm × 60mm represents the development of lateral surface of

(a) A square prism of side 30mm (b) A hexagonal prism of side 20 mm

(c) A cylinder of diameter $120/\pi$ (d) All of these

(ix) The three lines meeting at a point and making an angle of 1200 with each other is called-

(a) isometric axes (b) axonometric

(c) orthographic axes (d) oblique axes

(x) The offset command cannot be used to create-

(a) Concentric circles (b) Vertical straights

(c) Three parallel lines (d) Parallel arcs

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Section-B

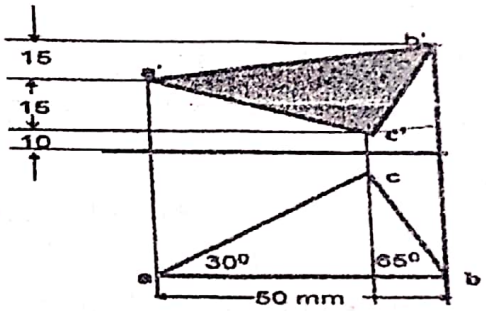
$5 \times 4 = 20$

2. State the position of object with respect to observer and reference planes for first and third angle of projection. Also, Draw convention symbol for first angle and third angle of projection for the same.

3. Explain UCS with reference to CAD software.

4. A line AB has its end A 20mm behind the VP and 30mm below the HP. The line makes 30^0 and 40^0 angles with the HP and VP respectively. The end B is in the first quadrant. The portion of the line in the first quadrant measures 60mm. Draw the projections of the line and locate its HT and VT. Also find its TL.

5. Find true shape and true angle of the following triangular lamina.



6. A cube of 45 mm edge is resting on HP with its vertical faces equally inclined to VP. A right regular hexagonal pyramid of 20mm base edge and 42mm height is placed centrally on top of the cube so that their axes are collinear and the two edges of the base of the pyramid are parallel to the VP. Draw the front and top views of the solids. Also project and auxiliary top view on auxiliary inclined plane perpendicular to the VP and making an angle of 45^0 to the HP.

7. A cone of 50mm diameter base and 56mm length of axis is resting on its base on HP. It is cut by an AIP which passes through a point 24mm from the apex along the extreme right generator of the cone and containing the extreme left point of the base circle also. Draw the sectional top view, front view and the true shape of the section.

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Section-C

$10 \times 3 = 30$

8. Draw free hand sketch (Elevation full in section) of spigot and socket joint.

9. An isosceles triangle ABC base 75mm and height 45mm has its base AC in the HP and inclined at 30^0 to the VP. The corners A & B are in the VP. Draw its projections.

10. A cone, base ϕ 52mm and axis 72mm long, resting on its base in HP is completely penetrated by a cylinder of base ϕ 32mm. The axis of the cylinder is 21mm above the base of the cone, is parallel to the VP and the HP and is 8mm in front of the axis of the cone. Draw the projections of the solids showing curves of intersection. Assume any suitable length of the cylinder.

11. A right circular cone, diameter of base 55 mm and height 80mm, rests on ground plane on its base. A bee starts from a point on right side of its base rim and moves around the surface of the cone and finally comes back to the starting point. Find the length of the shortest path the bee should take in covering the distance along the surface of the cone. Also show the path in front and top views.

12. A right regular hexagonal prism edge of base 20mm and height 60mm lies on one of its rectangular faces. A right circular cone, diameter of base 30mm and height 35mm rests centrally on the upper rectangular face of the prism. Draw the isometric projection of the combined solid.

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E-1124

B. E. Ist Semester (Main & Re) Examination, December – 2019

ENGINEERING GRAPHICS & DESIGN

Code : BME 101/201

Branch : (CSE, ECE, EE)

Time : Three Hours] *[Maximum Marks : 60*

Note : Attempt *all* questions from *Section – A four* questions from *Section – B* and *three* questions from *Section – C.*

Section- A - Filling the blanks/MCQ/True, false. $1 \times 10 = 10$

Section- B - Short answer type questions. $5 \times 4 = 20$

Section- C - Long/ descriptive answer type questions. $10 \times 3 = 30$

SECTION – A

1. (i) What are non parallel and non interesting lines called ?

(a) Spiral lines (b) Parallel lines

(c) Skew lines (d) Perpendicular lines

(ii) The following is not induded in title block of drawing sheet.

(a) Sheet No. (b) Scale

(c) Method of Projection (d) Size of Sheet

(iii) The dotted line represents.

(a) Hidden edges (b) Projection line

(c) Centre line (d) Watching line

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(iv) The internal angle of regular hexagon is ..... degree.

(a) 72 (b) 108

(c) 120 (d) 150

(v) Metric thread of 10 mm diameter is represented by :

(a) 10 M (b) M10

(c) M^ 10 (d) None of the above

(vi) The length : Width in case of an arrow head is.

(a) 1 : 1 (b) 2 : 1

(c) 3 : 1 (d) 4 : 1

(vii) A cube is resting on HP, with a solid diagonal perpendicular to H. The top view will appear as :

(a) Square (b) Rectangle

(c) Irregular hexagon (d) Regular hexagon

(viii) Radial line method of development is used to develop the surface of.

(a) Pyramid (b) Cone

(c) Cylinder (d) All of these

(ix) The offset command cannot be used to create :

(a) Concentric circles (b) Vertical Straights

(c) Three parallel lines (d) Parallel areas.

(x) Which grade of pencil is used for drawing arrowhead ?

(a) 2 H (b) 2 B

(c) 7 H (d) H

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SECTION – B

2. Write different type of equipments used in Drawing. Explain four with neat sketch.

3. Explain UCS with reference to CAD software.

4. Define : (i) A feature, (ii) A functional dimension, (iii) Datum Dimension, (iv) Notation of Dimension.

5. Point A is 20 mm above HP and 30 mm in front of VP and point B is in the HP and 40 mm behind the V. P. The distance between their projectors is 50 mm. Draw the projections of the points. Also draw straight lines joining their top and front view.

6. The end P of a line PQ 120 mm long is 30 mm above HP and 60 mm behind VP. The line is inclined at an angle of 30 ° with the reference plane of projection. The point Q is below the H.P. Draw the projections of the line PQ and locate the Point Q.

7. A regular hexagonal lamina of side 20mm rests on one of its sides on HP. Such that it is perpendicular to V.P. and inclined to the H. P. at 45°. Its corner nearest to the VP. is 15mm away from the VP. Draw the projection.

SECTION – C

8. Draw free hand sketch (Elevation full in Section) of, spigot and socket joint.

9. A right regular hexagonal. prism, side of base 20mm and 53mm long, lies, on one of its rectangular faces on HP. and its axis inclined at 45° to the VP. Draw its projection. When the centre of area of its each face which is towards the VP is 20 mm away from the VP.

10. An isosceles triangle ABC base 75 mm and height 45mm has its base AC in the H.P. and inclined at 30° to the VP. The corners A & B are in the VP. Draw its projections.

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11. A right circular cone, base diameter 40mm and. (i) height 55mm, (ii) Slant height 60 mm, rests on its base on HP. Develop its lateral surface.

12. A right circular cone of ϕ 30 mm base and height. 36mm rests centrally on top a square block of 48 mm side and 22 mm thick. Draw the isometric projection of two solids.

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