Total No. of Questions: 09

B.Tech. (2010 Batch) (Sem. – 1, 2)

ENGINEERING DRAWING AND COMPUTER GRAPHICS

M Code: 54013

Subject Code: ME-102

Paper ID: [A0125]

Time: 3 Hrs. **Max. Marks: 60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each, selecting at least TWO questions from each SECTION.**

SECTION A

1. a) What are the principal planes of projection; Show them with the help of a sketch.

   b) Draw the symbol of Ist & IIIrd Angle projections.

   c) What is a Profile plane and write its utility?

   d) Draw the trace of a line when it is parallel to VP and inclined to HP. Name the trace.

   e) What do you understand by an auxillary vertical plane (AVP) and an auxillary inclined plane (AIP)?

   f) Name the two methods of development used for the development of a sphere.

   g) What are the solids of revolutions; name them and how they are generated?

   h) What is the difference between an isometric view and an isometric projection?

   i) Draw the frustum of a cone.

   j) What is meant by Representative Factor (RF)? Give some suitable example.

SECTION B

2. Construct a diagonal scale to read meters, decimeters and centimeters for a RF of 1/50 and long enough to measure up-to 5 meters. Show it on the scale a length of 2.89 meters and 4.44 meters.

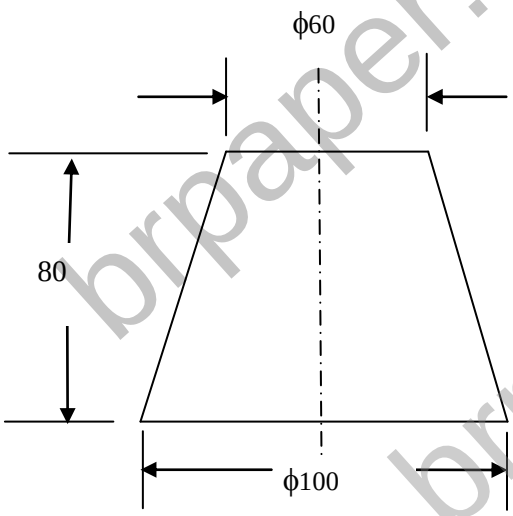
3. A point P is 25 mm in front of VP and 40 mm above HP. Another point Q is 40 mm in front of VP and 25 mm above HP. The distance between the projectors is 40mm. Draw the projections.

4. A regular pentagonal lamina of 25mm side has one of its one side in HP, its plane is inclined at an angle of 30° to HP and perpendicular to VP. Draw its projections.

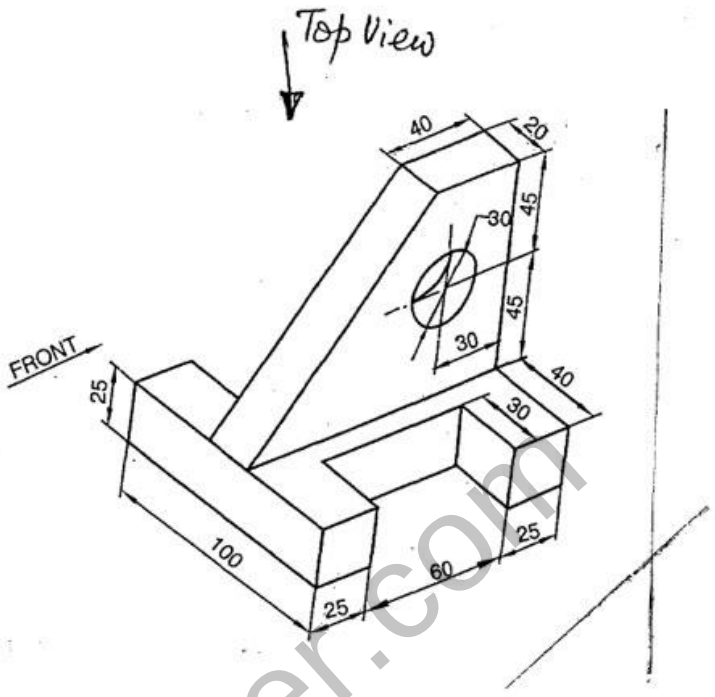
5. A hexagonal prism, base edge 20mm and height 50mm is resting on an edge of its base in HP in such a way that the base makes an angle of 45° with the HP. Draw the projection of the prism.

SECTION C

6. Draw the isometric view of the frustum of the cone as shown below:



7. Draw the front view and top view of the object shown below as indicated by arrows.



8. A vertical cylinder of 50mm dia and height 70 mm resting on its base on horizontal plane is completely penetrated by another cylinder of same dia and length. Their axes bisect each other at right angles and are parallel to VP. Draw their projections showing lines of penetration.

9. Draw the development of a sphere of 50 mm dia by Zone Method.

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Total No. of Questions : 18

B.Tech. (Aeronautical Engg./Aerospace Engg./ Automobile Engg./BT/CE/CSE/Electrical & Electronics Engg./EE/ECE/Electronics & Electrical Engg./IT/ME/Textile Engg.) (Sem.–1,2)

ENGINEERING DRAWING

Subject Code : BTME-102

M.Code : 54102

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.**
4. **Select atleast TWO questions EACH from SECTION - B & C.**

SECTION–A

Answer briefly/Fill in the blanks :

1) Define representative factor in scales.

2) What are uses of diagonal scale?

3) Differentiate between long break lines and short break lines used in engineering drawing.

4) What information does title block of the drawing sheet contain?

5) What are the standard sizes of drawing sheets according to BIS and which is suitable for drawing work?

6) Give the practical applications of the intersection of surfaces or interpenetration of solids.

7) A straight line will represent its true length in that plane to which it is ..... (perpendicular/parallel).

8) The intersection of the plane with V.P. is called its .....

9) An oblique solid is one which has its ..... to its base.

10) The development of the sphere is carried out ..... and ..... methods.

SECTION-B

11) Draw the projections of the line LM, 40 mm long parallel to V.P. and inclined to HP. 40°, when one of its ends is 25 mm away from H.P. and 15 mm away from V.P.

12) The projectors of the line AB are 60 mm apart. End A is 25 mm above HP and 30 mm in front of VP. End B is 35 mm above HP and 45 mm in front of VP. Find the true length of the line using auxiliary plane method. Also find the inclinations of the line with HP and VP.

13) A regular pentagonal lamina of 25 mm side has one side on the ground. Its plane is inclined at 45° to the HP and perpendicular to the VP. Draw its projections of the lamina.

14) A cone of 45 mm base and axis height 60 mm rests on a point on HP with its base inclined at 30° to HP and the plan of the axis is inclined at 45° to VP. Draw the projections of the solid.

SECTION-C

15) Draw the orthographic Projections (front, top and right side view) of the engineering object shown below :

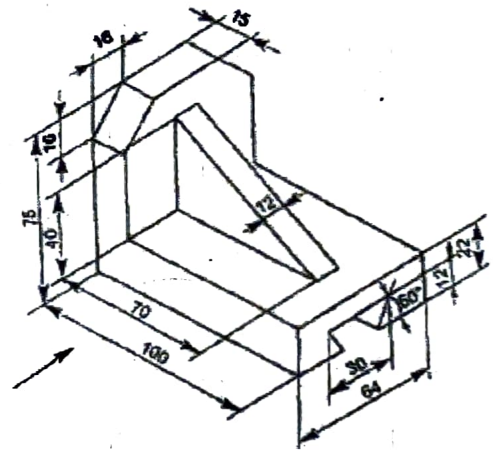

FIG.1

16) Draw the isometric projections of the sphere of 30 mm diameter resting centrally on top of a cube of edge 40 mm.

17) A cone of base diameter 50 mm and axis length 75 mm, resting on HP on its base is cut by a plane inclined at 45° to HP and perpendicular to VP and is bisecting the axis. Draw the front view and sectional top view and true shape of this section.

18) A hexagonal prism is placed on the HP such that one of the edges of its base is parallel to the VP. The height of the prism is 50 mm and its base edge is 30 mm. A cutting plane inclined at 45° to the HP, passes through one of the corners at the top face of the prism. Draw the lateral development of the prism below the cutting plane.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No. | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions : 09

B.Tech. (2011 to 2017) (Sem.–1,2)

ENGINEERING DRAWING

Subject Code : BTME-102

M.Code : 54102

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
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SECTION–A

1. Answer briefly / Fill in the blanks :

(a) What is the Representative Fraction (R.F.) or Scale Factor (S.F.)?

(b) Draw symbol for first angle projections.

(c) Define single stroke Gothic lettering system for alphabets.

(d) What is the difference between the true angle and the virtual angle of a line?

(e) What do you mean by true solid?

(f) Distinguish between frustum and truncated solid.

(g) "*In development of a cone and cylinder, the chord length between two successive points on the circumference is used for development, instead of the arc length. Is it a correct approach*"? Comment.

(h) If a plane is perpendicular to HP and parallel to VP, its projection on HP will reveal its ……. view.

(i) A cylinder is formed by rotation of ……. about its ……..

(j) The three forms of axonometric projections are isometric ……. and ……. projections.

SECTION-B

2. A line AB has the end A 10 mm in front of VP & 20 mm above HP and end B 55 mm in front of VP and 50 mm above HP. Distance between end projectors is 50mm. Draw the projection of line & determine its true length (TL), true inclinations θ, ϕ using rotation of line method. Also locate the midpoint of the line on projections and TL.

3. The centre lines of two pipes **ab** and **cd** are shown in figure 1. Find the shortest distance between the two lines. Also project this shortest distance back on the front and top views.

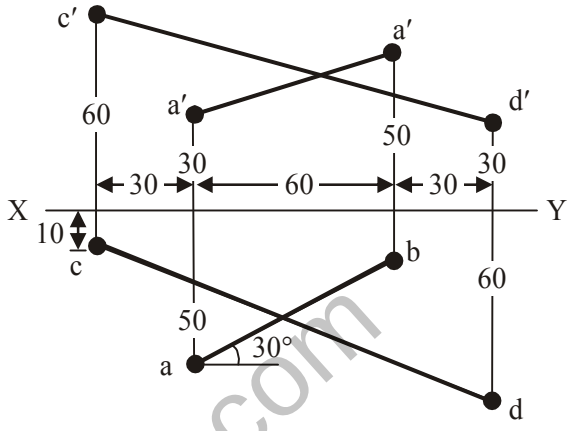


FIG.1

4. A square lamina of 40 mm side rests on one of its edges on the HP. The lamina makes an angle of 45° to the HP and the side on which it rests makes 30° to the VP. Draw the projections of the lamina.

5. A cone of 35 mm base diameter and 60mm height has its axis inclined at 30° to HP and the plan of the axis is inclined at 45° to VP. Draw the projections of the solid.

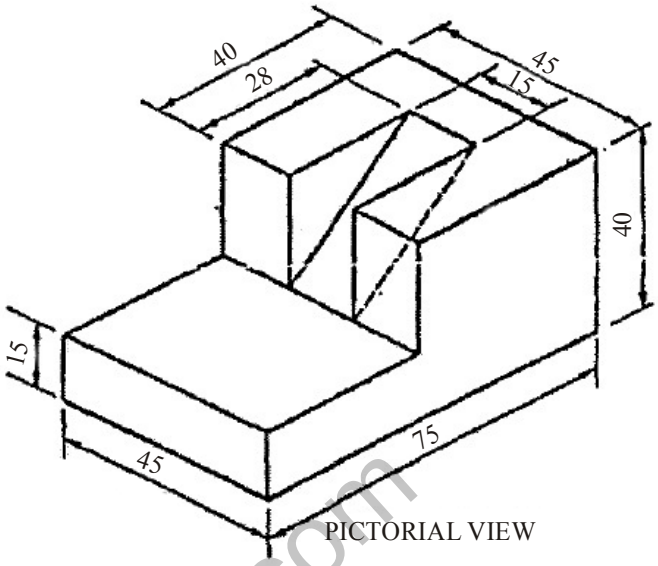
SECTION-C

6. A hexagonal pyramid side of base 25 mm and axis 50 mm long rests with its base on HP and an edge of its base is perpendicular to VP. It is cut by section plane perpendicular to VP, inclined at 30°to HP and passing through a point on axis 20mm below apex. Draw the sectional front, top views and true shape of the section.

7. A hexagonal prism, side of base 20 mm and axis 50 mm, rests with its base on HP such that one of its rectangular faces is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 45° to HP and passing through right corner of the prism. Draw the sectional top view, and develop the lateral surface of the truncated prism.

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

9. Draw the front, top and left side views of the solid given below :



PICTORIAL VIEW

FIG.2

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