JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year II Semester Examinations, September/October - 2021
ENGINEERING GRAPHICS
(Computer Science and Engineering)

Time: 3 Hours   **Max Marks: 75**

Answer any three questions
All questions carry equal marks
- - -

1.a) Draw a hyperbola having two asymptotes perpendicular to each other and passing through a point P at a distance of 30 mm from one asymptote and 36 mm from other. Draw a normal and tangent at any convenient point.

 b) Construct a diagonal scale of R.F = 1: 4000 to show meters and long enough to measure 500 meters. Indicate a length of 379 meters.   [13+12]

2.a) Draw the projections of the following points on a common reference line keeping the distance between their projectors 30 mm apart.
      i) Point A is lying 70 mm above the H.P. and on the V.P.
      ii) Point B is lying on the H.P. and 50 mm behind the V.P
      iii) Point C is lying 70 mm above the H.P. and on the V.P
      iv) Point D is lying on the H.P. and 50 mm in front of the V.P.
      v) Point E is lying 70 mm below the H.P. and 50 mm behind the V.P

 b) A 70 mm long line PQ, has its end P 20 mm above the H.P. and 30 mm in front of the V.P. The line is inclined at 45° to the H.P. and 30^0 to the V.P. Draw its projections.

                                                                                                                      [10+15]

3. A square pyramid of base side 30 mm and altitude 50 mm lies on one of its triangular faces on the H.P with its axis parallel to the VP. It is cut by a vertical plane inclined at 30^0 to the VP and meeting the axis at 40 mm from the vertex measured in the plan. Draw the top view, sectional front view and the true shape of the section.   [25]

4. Vertical cylinder of 70 mm diameter is penetrated by another cylinder of 45 mm diameter the axis of which is parallel to both HP and VP. The two axes are 9 mm apart. Draw the projection showing curves of intersection.   [25]

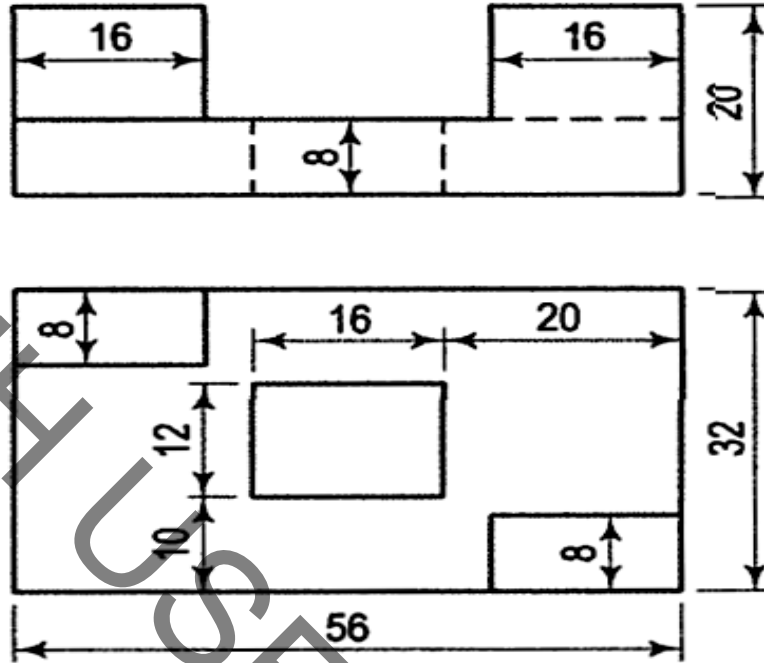5. Draw the isometric view of the machine parts shown in figure 1. (All dimensions are in mm) [25]

Figure: 1

6. Draw the orthographic projections of the machine part shown in figure 2: a) Front view b) Top view c) Side view. All dimensions are in mm. [25]
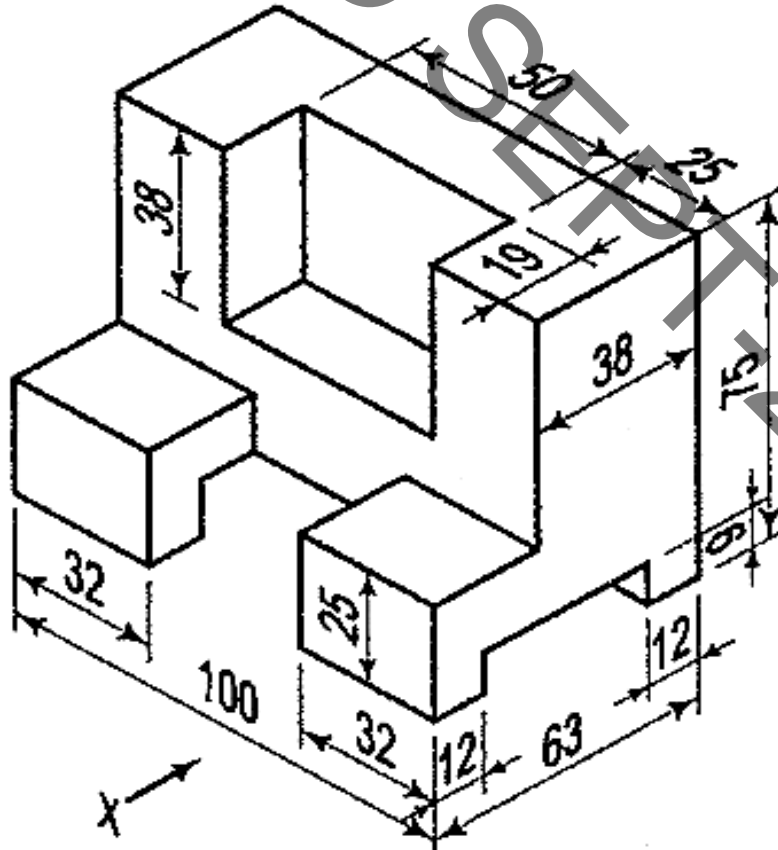

Figure: 2

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year II Semester Examinations, July/ August - 2021
ENGINEERING GRAPHICS
(Common to CSE, IT)

Time: 3 Hours   **Max. Marks: 75**

Answer any three questions
All questions carry equal marks
- - -

1.a) Draw an involute of a circle of 40 mm diameter. Also, draw a normal and tangent to it a point 100 mm from the center of the circle.

b) On a building plan, a line 20 cm long represents a distance of 10 m. Devise a diagonal scale for the plan to read up to 12 m, showing meters, decimeters and centimeters. Show on your scale the lengths 6.48 m and 11.14 m. [10+15]

2. The front view of a 125mm long line PQ measures 75mm and its top view measures 100mm. Its end Q and the mid-point M are in the first quadrant, M being 20mm from both the planes. Draw the projections of the line PQ. [25]

3.a) Draw the projections of a regular pentagon of 40mm side, having its surface inclined at 30^0 to the H.P and a side parallel to the H.P and inclined at an angle of 60^0 to the V.P.

b) A pentagonal pyramid, base 30 mm side and axis 70 mm long, has one of its slant edges in the H.P. and inclined at an angle of 30^0 to the V.P. Draw the projections of the solid when the apex is towards the observer. [10+15]

4. A Cylinder 65 mm diameter and 90 mm long, has its axis parallel to the H.P. and inclined at 30^0 to the V.P. It is cut by a vertical section plane in such a way that the true shape of the section is an ellipse having the major axis 75 mm long. Draw its sectional front view and true shape of the section. [25]

5. Draw the isometric projection of a cone of 30 mm diameter, height 40 mm placed centrally on the top face of truncated square pyramid of top face side 40 mm and bottom face side 50 mm with the height of 50 mm. [25]

6. Draw the isometric view of the object whose front view and top view are as shown in Figure. (All dimensions are in mm). [25]
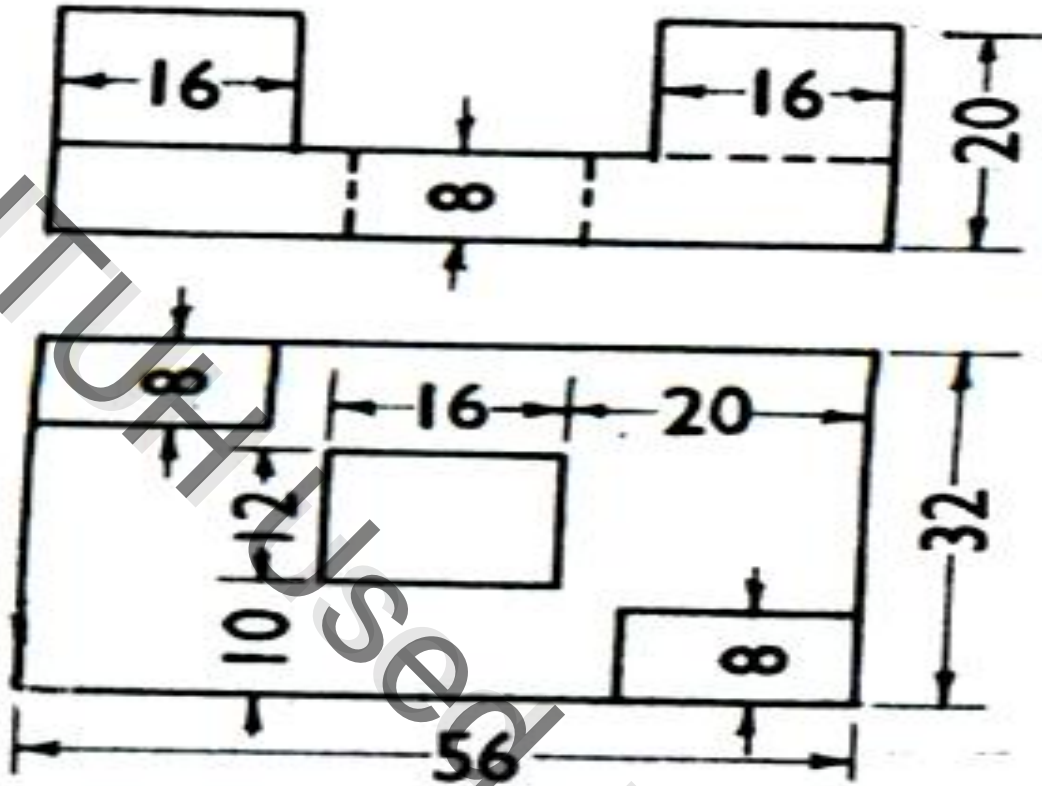

Figure: 2

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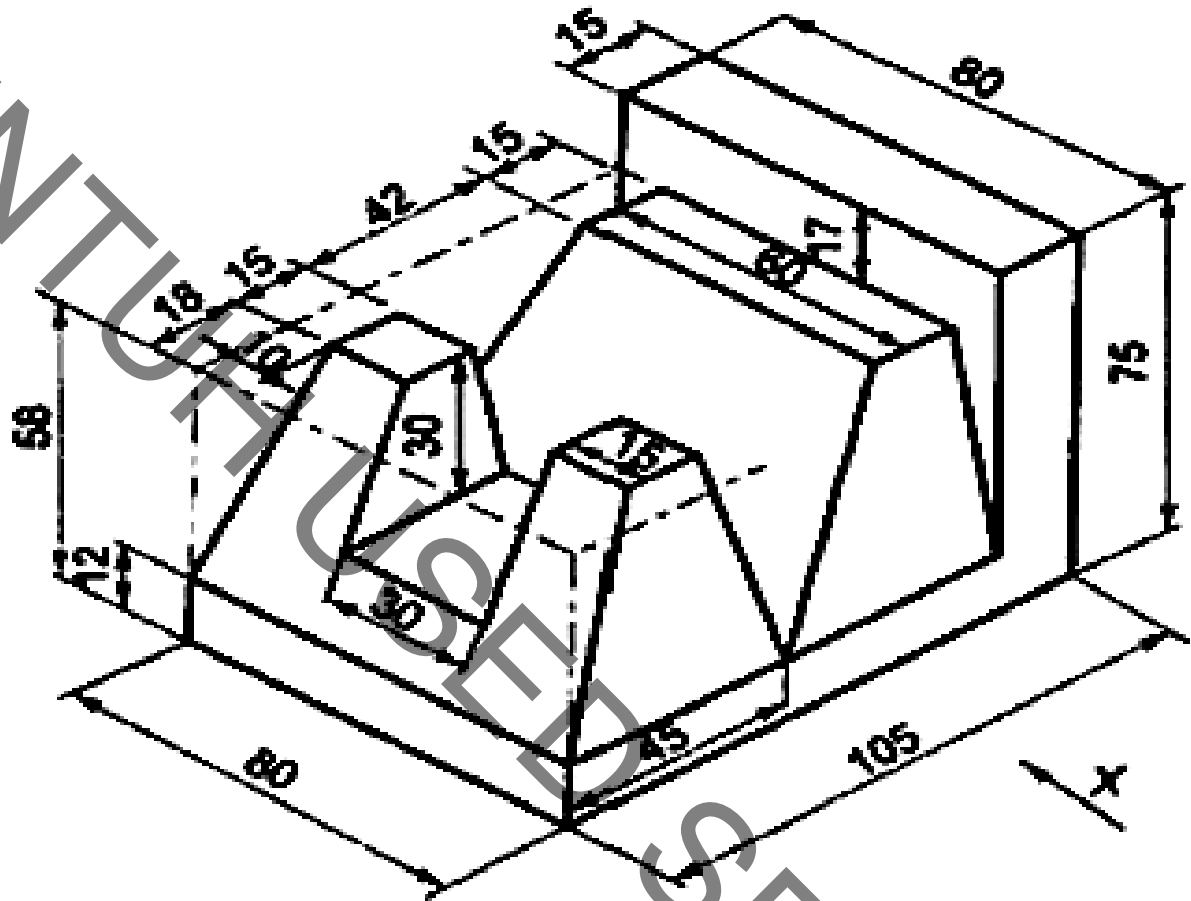Time: 3 Hours   Max. Marks: 75

Answer any three questions
All questions carry equal marks
- - -

1.a) Draw a parabola if the distance of the focus from the directrix is 55 mm.
  b) A rectangular field of 25000 m^2 is represented on a map by a rectangle of 5cm× 4cm sides. Calculate the R.F, draw a diagonal scale to read up to a single meter and long enough to measure up to 500 m. Mark a length of 362 m on the scale.   [10+15]

2.a) Draw an ellipse having conjugate axes of 60 mm and 40 mm long and inclined at 75^0 to each other.
  b) Construct a plain scale of 1:4 to show decimeters and centimeters and to read upto 1 metre. Show the length of 6.4 decimetres on it.   [10+15]

3.a) Line AB is 75 mm long and it is 40^0 & 30^0 inclined to HP & VP respectively. End A is 10 mm above HP and 12 mm in front of VP. Draw projections. Line is in 1st quadrant.
  b) A circular plate of diameter 60 mm is resting on a point of its periphery on H.P. such that it makes an angle of 30^0 to the H.P. The diameter passing through the point of its resting on H.P. makes an angle of 60^0 with V.P. Draw the projections of it.   [10+15]

4.   A pentagonal prism has height 50 mm and the side of a base 25 mm. The prism rests on one of its sides of the base on the H.P such that the rectangular face is inclined at 50^0 to the H.P. and base edge of the same surface makes an angle of 35^0 with the V.P. Draw its projections.   [25]

5.   One cuboid of side of 40 mm × 55 mm × 60 mm is resting on its longer side on H.P. and one of the longer surfaces of the cuboid is parallel to H.P. It is cut by a cutting plane which is perpendicular to H.P. and inclined 35^0 to V.P. Develop the lateral surface of the cuboid.   [25]

6. Draw the orthographic view of the following figure. All dimensions are in mm. [25]

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