V61/T11025/EE/20160718

Time : 3 Hours   **Marks : 80**

Instructions :

1.   All Questions are Compulsory.

2.   Each Sub-question carry 5 marks.

3.   Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.

4.   Question paper of 80 Marks, it will be converted in to your programme structure marks.

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1.   Solve any **four** sub-questions.

   a)   Draw an arc of 30mm radius touching to a straight line and passing through a point 20mm from the line.   5

   b)   Construct a parabola with a base of 80mm and axis height 45mm by the tangent method.   5

   c)   A pendulum OC pivoted at O, is 120mm long. It swings 30 degree to the right of vertical and also 30 degree to the left of vertical. Insect, initially at O reaches the point C, when the pendulum completes two oscillations. Draw the path of the insect, assuming motion of insect and of pendulum as uniform.   5

   d)   A point P is 120mm away from the fixed point pole O. A point P moves towards pole O and reaches the position Q in one convolution where OQ is 24mm. The point P moves in such a way that its movement towards fixed point O, being uniform with its movement around fixed point pole O.

         Draw the curve traced by the point P. Name the curve.   5

   e)   Draw a neat sketch of square threads and write proportionate dimensions in tabular form.   5
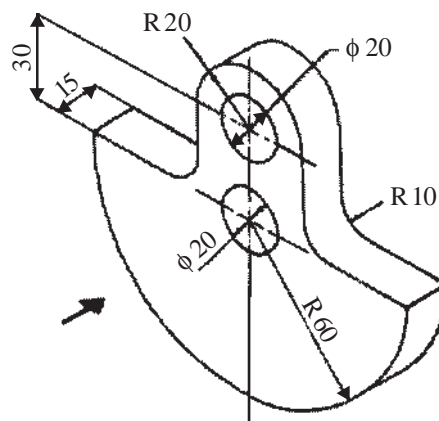
2.   Solve any **four** sub-questions.

   a)   Redraw   5
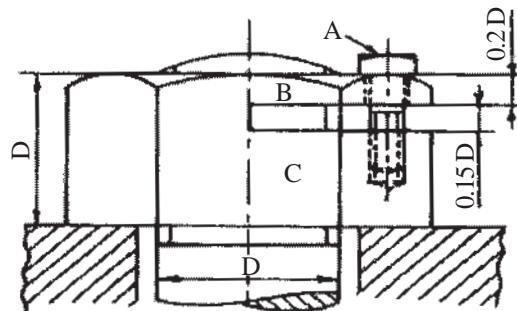
Sawn nut

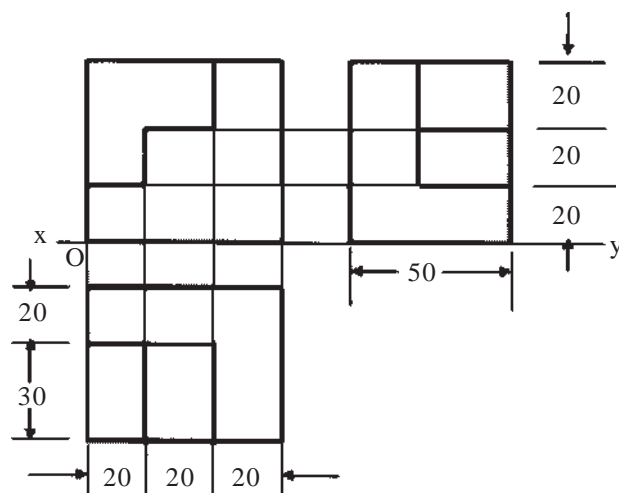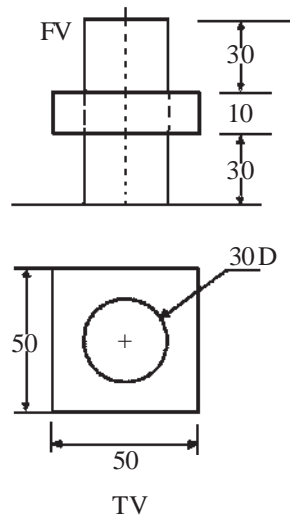b)   Draw the three views of following object using first angle method.   5

R 30

R 15

38

30

20

15

10

15
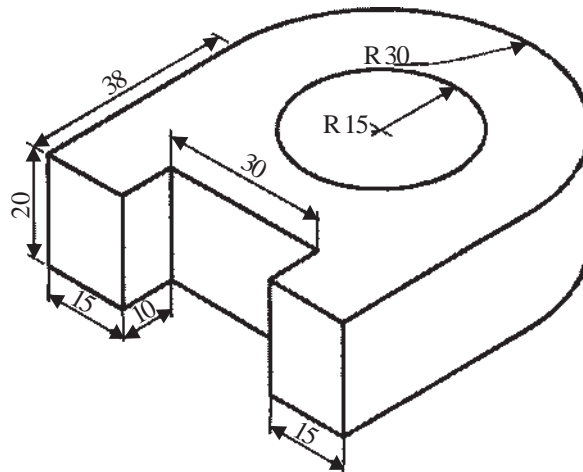
c)   Draw the three views of following object using third angle method.   5

R 20

φ 20

30

15

R 10

φ 20

R 60

d)   Draw isometric view.   5

20

20

20

x

O

y

50

20

30

20   20   20

e) Draw isometric projection. 5

FV

30

10

30

30 D

50

50
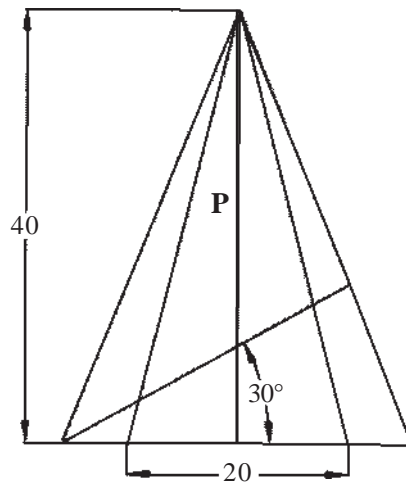
TV

3. Solve any **four** sub-questions.

a) Draw the development of the lateral surface of the pyramid, the FV of which is shown in figure. 5

40

P

30°

20

b) Draw the projection of 5

a point A, 13mm above HP and 20mm behind VP

a point B, 13mm above HP and 15mm in front of VP

a point C, 15mm below HP and 18mm in front of VP

a point D, 20mm above HP and 17mm behind VP

a point E, 17mm below HP and 19mm in front of VP

c) A line BC, 80mm long, is inclined at 45° to the HP and 30° to the VP. Its end B is in the HP and 40mm in front of VP. Draw the projections and determine traces. 5

d) A cylinder 40mm diameter and 50mm axis is resting on one point of a base circle on VP while it's axis makes 45° with VP and FV of the axis 35° with HP. Draw projections.

5

e) A hexagonal pyramid has an altitude of 60mm and side base 30mm. The pyramid rests on one of its side of the base on HP such that the triangular face containing that side is perpendicular to HP. Draw the front and top views.

5

4. Solve any **four** sub-questions.

a) A square (side 40mm) pyramid (height 70mm) stands on its base on H.P. and all the base sides are equally inclined to the V.P. A section plane ($\perp$ to V.P and inclined at 45° to H.P.) bisects the axis of pyramid. Draw sectional top and sectional side views.

5

b) A cylinder is cut by an auxiliary plane such that true shape of section is an ellipse of major and minor axes of length 100mm and 60mm respectively. The smallest generator of the truncated cylinder is 20mm. Find inclination (with axis) of the section plane.

5

c) A sq.prism 30mm base sides and 70mm axis is completely penetrated by another square prism of 25mm sides and 70mm axis, horizontally. Both axes Intersects and bisect each other. All faces of prisms are equally inclined to VP. Draw projections showing curves of intersections.

5

d) A cylinder 45mm dia and 65mm axis is completely penetrated by a square prism of 20mm sides and 65 mm axis, horizontally. Both axes Intersect and bisect each other. All faces of prism are equally inclined to HP. Draw projections showing curves of intersections.

5

e) What is receding lines, receding angles cabinet oblique projections?

5

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