B.E. I Semester Examination
BE-I/12(A)
228041
ENGINEERING GRAPHICS
Course No. M-106/Eng-106

Time Allowed- 3Hours   *Maximum Marks-100*

Note :- Attempt five questions such that **two** questions from unit - I and **one** question **each** from unit **II, III** and **IV.**

Unit - I

1. a) Construct an Archimedean spiral of one convolution, given the radial movement of the point P during one convolution as 60 mm and initial position as pole O.   (10)

    b) An inelastic string is unwound to a length of 122 mm from a drum of ϕ 30 mm. Draw the locus of the free end of the string which is held taut during unwinding.   (10)

2. The front view of a line PQ measures 52 mm and it makes an angle of 45° with XY. Line. End P is in HP and VT of the line is 12 mm below the HP. The line is inclined at 30° to the VP. Draw its projections and find its TL and θ.   (20)

3. Draw the projections of a circle of 70 mm diameter having the end A on a diameter AB in HP, the end B in the VP and the plane of the circle inclined at 30° to the HP and at 60° to the VP. (20)

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Unit - II

4. A right circular cone, diameter of base 50 mm and height 65 mm, rests on its base rim on HP with its axis inclined at 45° to it such that;

    i)   top view of the axis inclined at 30° to VP;

    ii) axis inclined at 30° to the VP. Draw its projections. (20)

5. A right regular hexagonal pyramid, edge of base 25 mm and height 65 mm, rests on its base;

    a)   On ground plane,

    b)   On HP, with one of its sides parallel to VP. A section plane perpendicular to HP and inclined to the VP at 30° cuts the pyramid and is 8 mm away from the axis. Draw its top view and sectional front view. (20)

Unit - III

6. A right circular cylinder of ϕ 60 mm and height 90 mm, resting on its base in HP. it is completely penetrated by another cylinder of ϕ 45 mm and 90 mm long, such that their axes bisect each other at right angles and are parallel to VP. Draw their projections showing curves of intersection. (20)

7. A right rectangular pyramid of base 48×32 mm and height 62 mm, rests on its base in HP with one of its base sides parallel to VP. A section plane perpendicular to the VP and inclined at 30° to the HP cuts the pyramid, bisecting its axis. Develop the lateral surface of the truncated pyramid. (20)

Unit - IV

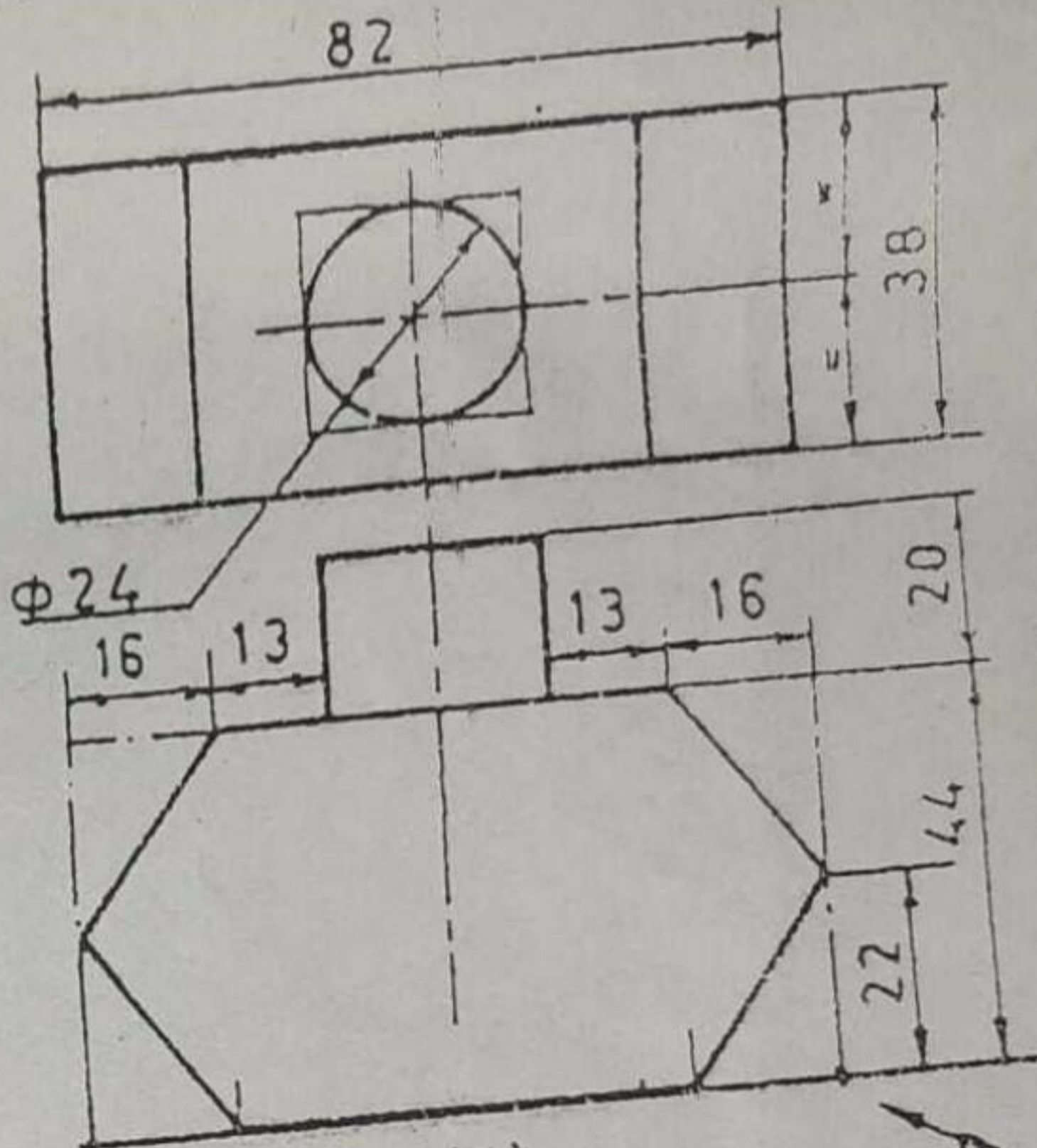8. Two simplified orthographic views of an ink pot are shown in fig (a). Draw its isometric projections.

Figure (a)

(20)

9. Figure. 1 below shows a solid object. Using full size scale. draw the following orthographic views :

i) Front view

ii) Left hand side view

iii) Top view
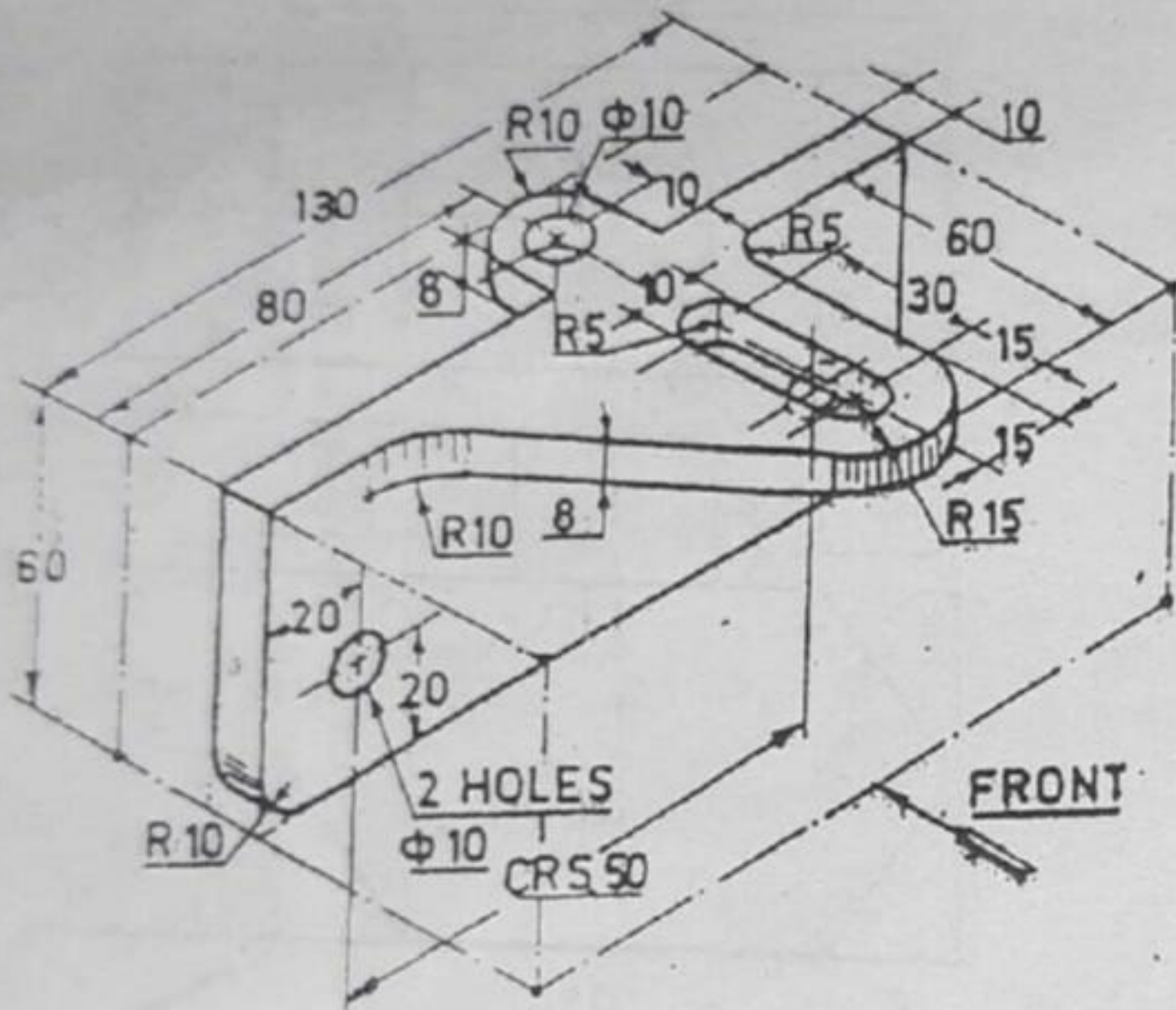
Also add all the necessary dimensions.

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Figure 1

(20)