C 31705 (Pages : 2) Name.....

Reg. No.....

COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2007

EN 04 106 A—ENGINEERING GRAPHICS (A)

(Common to AI, CS, EE, EC, IT, IC, PT, BM, BT)

[2004 admissions]

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*
All questions carry equal marks.
Assume missing data, if any suitably.

1. (a) A line AB, 65 mm long has its end A, 25 mm above the HP and 20 mm in front of the VP. The end B is 40 mm above the HP and 50 mm in front of the VP. Draw its projection and find its inclinations with HP and VP. Also locate its traces.

Or

(b) A line AB, 90 mm long, is inclined at 30° to the HP its end A is 12 mm above the HP and 20 mm in front of the V.P. its front view measures 65 mm. Draw the top view of AB and determine its inclination with the V.P.

2. (a) A square lamina ABCD of 40 mm side rests on one of its corners on ground. The plane is inclined at angle of 30° to the ground and diagonal DB, in plan, inclined at 45° to the VP and parallel to the HP. Draw its projections.

Or

(b) A vertical cylinder of diameter 30 mm and axis height 65 mm is placed centrally over a right hexagonal prism of base side 30 mm and height 20 mm. It is titled such that the axis is inclined at 30° to H.P. and parallel to V.P. with a base edge of the hexagon in H.P. Draw the projection using auxiliary projection method.

3. (a) A cone of base diameter 60 mm. and height 80 mm. is resting on its base on the H.P. It is cut by a section plane inclined at 40° to the H.P. and passing through a point which is 40 mm below the vertex of the cone. Draw the front view, sectional top view and true shape of the section.

Or

(b) Draw the development of the lateral surface of a right regular hexagonal pyramid of side 40 mm. and height 100 mm. It stands in its base of HP with one of its base edges parallel to VP. A circular hole of diameter 40 mm is drilled through the pyramid in such a way that the arch of hole is perpendicular to VP and 30 mm above the base. Assume that the axes of intersect each other.

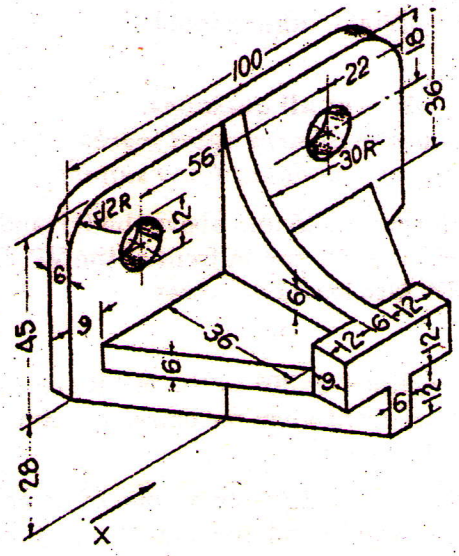
4. (a) A sphere of radius 20 mm is kept on the face of a square prism of side of base 40 mm and height 20 mm. The Latter is placed on the top face of a cylinder of 65 mm diameter and 25 mm height. All the three solids have the common axis. Draw the isometric projection.

Or

Turn over

(b) Draw the perspective projection of a pentagonal prism of side 30 mm and length 60 mm, lying on one of its rectangular faces on the ground plane and one pentagonal face touching the picture plane. The station point is 55 mm in front of the picture and lies in the central plane which is 75 mm to the left of the centre of the prism. Station point is 30 mm above the ground plane.

5. (a) Draw the dimensioned orthographic views (all three) of the object shown in Figure below.



Or

(b) (i) Draw three views of a hexagonal headed bolt 30 mm diameter and 110 mm long with a hexagonal nut and washer.

(ii) Give by means of neat sketches, an example of each of the following methods of locking a nut :

(1) By a split-pin.

(2) By a set-screw.

(3) By a washer.

(4) By a fibre-ring.