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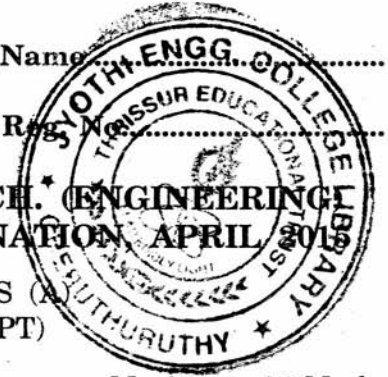
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Name:

Roll No:

**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
[SUPPLEMENTARY] [09 SCHEME] DEGREE EXAMINATION, APRIL 2016**

EN 09 108 (A)—ENGINEERING GRAPHICS (A)
(AE, AN, AU, BT, EC, EE, IC, PE AND PT)



Time : Three Hours

Maximum : 70 Marks

*Answer three questions from Part A
and any two questions from Part B.
All questions carry equal marks.*

Part A

1. (a) A line AB 120 mm. long is inclined at 45° to the HP and 30° to the VP. Its mid-point is in VP and 20 mm. above HP. The end A is in the third quadrant and B is in the first quadrant. Draw the projections of the line. Mark the traces of the line.

Or

- (b) A rhombus of major diagonal 70 mm. and minor diagonal 50 mm. is resting on HP on one of its corners, such that it appears as a square of diagonal 50 mm. in TV. Draw its projections if the major diagonal is inclined at 30° with VP.

(14 marks)

2. (a) A rectangular prism of base 40 mm. \times 30 mm. and height 70 mm. rests with its longer edge of the base on the VP. If the axis of the prism is inclined to VP at 30° and the front view of the axis is inclined to XY line at 45° . Draw the top view and front view of the prism.

Or

- (b) A cone with a 60 mm. base diameter and a 70 mm. long axis on its base in HP. It is cut by an AIP, passing through the mid-point of the axis such that the true shape of the section is an ellipse of largest major axis. Draw the projections of the truncated cone and the true shape of the section. Determine the inclination of the section plane.

(14 marks)

3. (a) The development of a right circular cone is a semi-circle of radius equal to 100 mm. A square having a diagonal length of 100 mm. is removed. Draw the front and top views of the cone showing views of the portion removed.

Or

- (b) A square prism of side of base 50 mm. is resting on its base on HP with a face of it inclined at 30° to VP. It is penetrated by another square prism with side of base 40 mm. and faces of which are equally inclined to VP. The axes of the two prisms are intersecting each other at right angles. Draw the projections of two prisms showing the lines of intersection.

(14 marks)

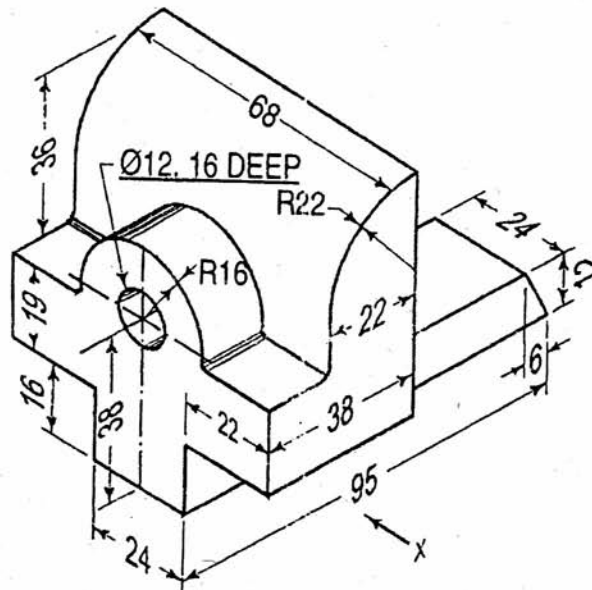
[3 \times 14 = 42 marks]

Turn over

Part B

Answer any **two** questions.

4. (a) A sphere of diameter 40 mm. rests centrally on the top smaller end of a frustum of a hexagonal pyramid. The frustum of the pyramid has 25 mm. sides at the top, 40 mm. sides at the base and is 80 mm. high. Draw the isometric projection of the combination of solids. (14 marks)
- (b) Draw the perspective view of a rectangular block 3 m \times 2 m \times 1.5 m resting on a horizontal plane with one of the rectangular plane making an angle of 45° with PP. The observer is at a distance of 6 m. from the picture plane. Assume eye level on 1.5 m. (14 marks)
- (c) Draw the dimensioned orthographic views (all three) of the object shown in Figure below :



(14 marks)

[2 \times 14 = 28 marks]