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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – JUNE 2023

Semester: III

055ME36 ENGINEERING GRAPHICS

Time: 3:00 Hours

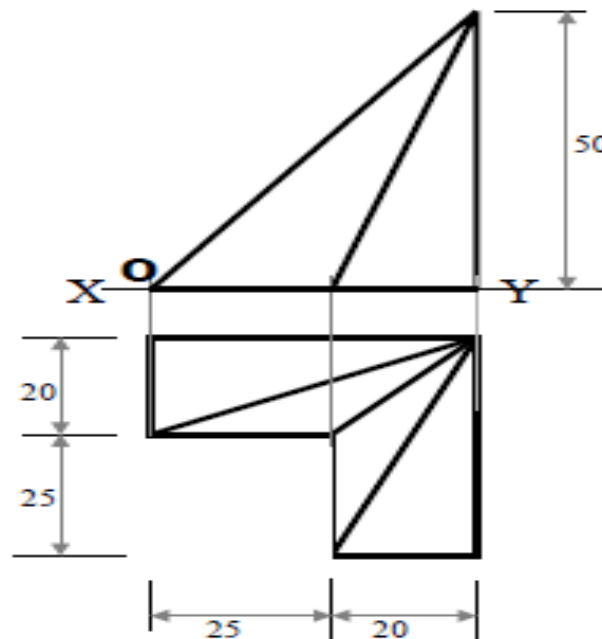
Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

1. a) A square prism of base side 60mm rests on one of its ends on HP with the base sides equally inclined to the VP. It is penetrated fully by another square prism of base side 45mm with the base side equally inclined to the HP. The axes intersect at right angles. The axis of the penetrating prism is parallel to both HP and VP. Draw the projections of the prisms and show the lines of intersection. Assume suitable height for the prisms. **(10 Marks)**

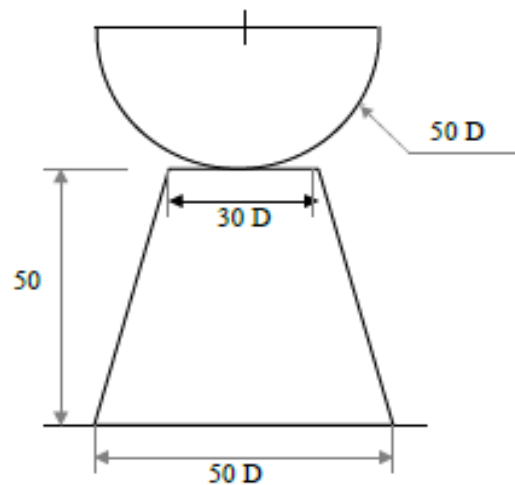
b) A horizontal cylinder of 50mm diameter and 100mm long penetrates a vertical cylinder of 80mm diameter and 120mm long resting on HP. The axis of horizontal cylinder is parallel to VP and 60mm above HP. Draw the projections showing the curve of intersection. **(10 Marks)**

2. a) Front View & Top View of an object are given. Draw its isometric view.



(10 Marks)

b) A hemi-sphere is centrally placed on the top of a frustum of cone. Draw isometric projections of the assembly.



(10 Marks)

3. a) A tetrahedron of 50 mm long edges is resting on one edge on Hp while one triangular face containing this edge is vertical and 45° inclined to VP. Draw projections. **(10 Marks)**

b) A cube of 50 mm long edges is so placed on Hp on one corner that a body diagonal through this corner is perpendicular to Hp and parallel to VP Draw its three views. **(10 Marks)**

4. a) What are the requirements of good drawing? **(5 Marks)**

b) Draw any 15 building material symbols. **(15 Marks)**

5. a) Draw elevation and sections of a fully planned door. **(10 Marks)**

b) Draw elevation and section plan of door frame. **(10 Marks)**

6. a) A cylinder 50mm diameter, and 70mm axis is completely penetrated by another of 40 mm diameter and 70 mm axis horizontally Both axes intersect & bisect each other. Draw projections showing curves of intersections. **(10 Marks)**

b) A cylinder 50mm dia. and 70mm axis is completely penetrated by a square prism of 25 mm sides and 70 mm axis, horizontally. Both axes intersect & bisect each other. All faces of prism are equally inclined to Hp. Draw projections showing curves of intersections. **(10 Marks)**

7. a) A vertical cylinder of base diameter 50 mm and axis length 60 mm is cut by a two planes which are perpendicular to VP and inclined at 45° to HP and passing through either side the center point of the top face. Draw the development of the lateral surface of the cylinder.

(10 Marks)

b) A square pyramid of 25 mm base edge and 50 mm height rests with its base on HP with all of its base edges equally inclined to VP. It is cut by a plane perpendicular to VP and inclined to HP at 60° , passing through the extreme right corner of base. Draw the development of the lateral surface of the pyramid. **(10 Marks)**