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300211(37)

B. E. (First & Second Semester) Examination, Nov.-Dec. 2019

(Old Scheme)

(AEI, Bio-Tech., Chem., Civil, CSE, Elect., EEE, EI, ET & T, IT, Mech., Mining, Metallurgy, Mechatronics, Production Automobile & Lateral B. Sc Branch)

ENGINEERING GRAPHICS

Time Allowed : Four hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each question is compulsory, attempt any* ***two*** *parts from part (b), (c) and (d). Assume suitable data if required.*

Unit-I

1. (a) Define R.F. What are the values of R.F. for reducing, enlarging and full size scale? 2

(b) On a building plan, a line 20 cm long represents a distance of 10 meter. Devise a diagonal scale for the plan to read up to 12 m, showing meter, decimeters and centimeters. Show on your scale the length of 6.48 m and 11.14 m. 7

(c) A ball thrown up in the air reaches a maximum height of 45 meters and travels a horizontal distance of 75 meters. Trace the path of the ball, assuming it to be a parabolic. 7

(d) Show the means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 50 mm. 7

Unit-II

2. (a) What are the difference between first angle and Third angle projection? 2

(b) Two points A and B are in H.P. The point A is 30 mm in front of the V.P., while B is behind the V.P. the distance between their projectors is 75 mm and the line joining their top views makes an angle 45° with XY. Draw the projections and find the distance of the point B from the V.P. 7

(c) The top view of 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. its one end A is in the H.P. and 12 mm in front of the V.P. Draw the projection of AB and determine its inclinations with the H.P. and V.P. 7

(d) Two oranges on a tree are respectively 1.8 m and 3 m above the ground and 1.2 m and 2.1 m from a 0.3 m thick wall, but on opposite sides of it. The distance between the oranges, measured along the ground and parallel to the wall is 2.7 m. Determine the real distance between the oranges. 7

Unit-III

3. (a) Define Oblique plane. 2

(b) The top view of a plate, the surface of which is perpendicular to the V.P. and inclined at 60° to the H.P. is a circle of 60 mm diameter. Draw its three views. 7

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(c) A hexagonal pyramid, base 25 mm side and axis 50 mm long, has an edge of its base on the ground. It axis is inclined at 30° to the ground and parallel to the V.P. Draw its projections. 7

(d) A cylinder of 40 mm diameter, 60 mm height and having its axis vertical. It is cut by a section plane perpendicular to the V.P. inclined at 45° to the H.P. and intersecting the axis 32 mm above the base. Draw its front view, sectional top view, and true shape of the section. 7

Unit-IV

4. (a) What is the difference between isometric view and isometric projection? 2

(b) A cone of base diameter 60 mm and axis 70 mm long is resting on its base on H.P. It is cut by a section plane perpendicular to both H.P. and V.P. at a distance 10 mm to the left of the axis. Draw the development of the lateral surface of the right remaining portion. 7

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(c) A cylinderical block of base, 60 mm diameter and height 90 mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. 7

(d) Draw the isometric view of the drawing as shown in following figure. 7

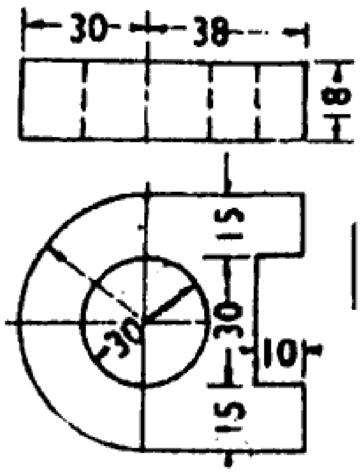

Fig.

Unit-V

5. (a) Write the names of any four CAD software's? 2

(b) What are the benefits of CAD and what are its limitations? 7

(c) Explain the various methods in CAD for drawing a circle? 7

(d) Explain the following in AUTOCAD.

(i) Absolute coordinate system

(ii) Polar coordinate system