



ACE
Engineering College
(with a Difference in Excellence)

An AUTONOMOUS Institution



Question Paper Code:

ME104ES

ACE-R20

Semester End Examination
I B. Tech- I Semester- JULY- 2021
Engineering Graphics
(Common to CSM, CSO)

Time: 3 Hours

Max. Marks: 70

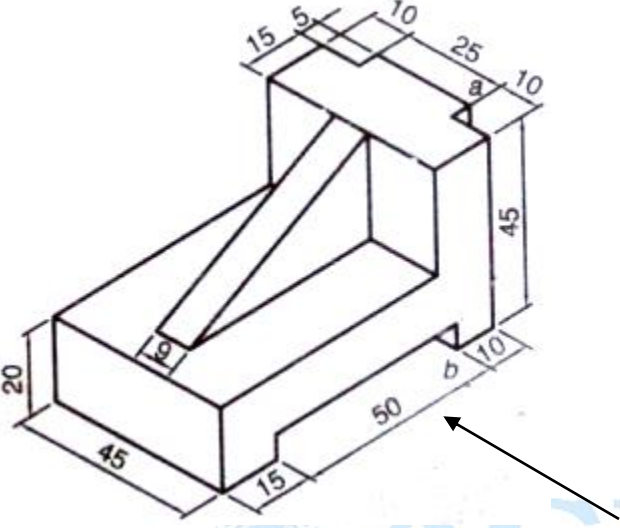
H. T. No

--	--	--	--	--	--	--	--	--	--

Answer any five full questions from the following. All Questions carry equal marks.

M=Marks; CO=Course Outcomes; PO= Program Outcomes

Q.No	Question	M	CO	PO
1. a)	A fixed point is 80 mm from a fixed straight line. Draw the locus of a point P moving in such a way that its distance from the fixed straight line is twice its distance from the fixed point. Name the curve. Also draw a tangent and normal to the curve at any point on it.	7	1&2	1,2,3,10
b)	The marina beach at chennai is 2.5km long. On inspection of the road map, its equivalent distance measures 5cm. Draw a diagonal scale to read 50m minimum. Mark on the scale a distance of 6350 m.	7	1&2	1,2,3,10
2. a)	Draw the projections of the following points on the same reference line, keeping the projectors 30mm apart (i)A, 30 mm above HP and 30 mm in front of VP (ii)B, 45 mm below HP and 30 mm behind VP (iii)C, 40 mm above HP and in the VP (iv) D, 40 mm in front of VP and in HP	7	1&2	1,2,3,10
b)	A fountain jet discharges water from ground level at an inclination of 50° to the ground. The jet travels a horizontal distance of 9m from the point of discharge and falls on the ground. Trace the path of the jet.	7	1&2	1,2,3,10
3.	A thin rectangular plate of side 40 mm x 20 mm has its shorter side in the HP and inclined at an angle of 30° to the VP. Draw the Projections of its front view when its top view is a perfect square of 20 mm side.	14	1&2	1,2,3,10
4.	Draw the projections of a cylinder, base 25 mm radius and axis 70 mm long, resting on one of its generator on the H. P., with the axis inclined at 45° to the V. P.	14	1&2	1,2,3,10
5.	A rectangular prism 30 mm x 60 mm and height 100 mm is standing on the base on the ground with the longer edges of the base parallel to the VP. It is cut by an AIP plane to give the view from above the section as a square of 30 mm sides. Draw an auxiliary View with the true shape of the section and find the inclination of the auxiliary inclined plane with the ground.	14	1&2	1,2,3,10
6.	Two ducts of square cross-section are joined together with their axes at right angles. The vertical duct has a side of 50mm and the horizontal duct has a side of 40mm. All the faces of both the ducts are equally inclined to VP. Draw the projections, showing the lines of intersection of the surfaces of the ducts.	14	1&2	1,2,3,10

7.	A pentagonal prism having a base with 30 mm side and 65 mm long axis, is resting on its base in the H.P. with a rectangular face parallel to the V.P. It is cut by a section plane perpendicular to the V.P., inclined at 30° with the H.P., and passing through a point on the axis, 25 mm from one of the bases. Draw the development of its lateral surface.	14	1&2	1,2,3,10
8.	<p>Draw the front view, top view and side view of the object whose isometric view is shown in the Figure below (All dimensions are in mm).</p>  <p>The isometric view shows a rectangular block with a total length of 50 mm and a height of 45 mm. The front face has a width of 45 mm. A vertical slot of width 10 mm is cut into the front face, extending 10 mm from the right edge. The top surface of the block has a total length of 50 mm. A rectangular feature of width 15 mm and height 5 mm is located on the top surface, starting 10 mm from the left edge. A diagonal cut is made through this feature, starting from the top-left corner and extending to the bottom-right corner. The cut is perpendicular to the vertical plane and inclined at 30 degrees to the horizontal plane. The cut passes through a point on the horizontal axis of the feature, 25 mm from the right edge. The cut surface is shown as a solid line. The dimensions are: 20 (height of the block), 45 (width of the front face), 15 (width of the top feature), 50 (total length), 10 (width of the slot), 10 (distance from right edge to start of slot), 15 (width of top feature), 5 (height of top feature), 10 (distance from left edge to start of top feature), 25 (distance from right edge to cut), 10 (width of slot), 45 (height of block), 10 (width of slot), 10 (width of top feature), 10 (width of slot).</p>	14	1&2,3	1,3,5