

***B.Tech. Degree I & II Semester Examination in Marine
Engineering May 2008***

MRE 106 ENGINEERING GRAPHICS

Time: 3 Hours

Maximum Marks: 100

- I a) A motor car is moving at a speed of 60 km/h. Draw a diagonal scale to represent 1 Km by 2 cm and to show upto 5 km. Mark on it the distance covered by the car in 3 minutes 24 seconds. (10)
- b) Two points R and S are 60mm apart. Draw the curve described by a point P moving in such a way that the difference between its distances from R and S is always constant and is equal to 25 mm. (10)
- OR**
- II a) Draw the involute of a circle of diameter 40mm. (10)
- b) A parabolic arch has a span of 5.5m and rise of 2.5m. Draw the shape of the arch by offset method. (10)
- III A line PQ, 90mm long is inclined at 40° to the HP and 25° to the VP. Its end P is 15mm below the HP and 20mm behind the VP. The end Q is in the first quadrant. Draw its project. (20)
- OR**
- IV A pentagon of side 30 mm rests on the ground on one of its corners with the sides containing the corner being equally inclined to the ground. The side opposite to the corner on which it rests is inclined at 30° to the VP and is parallel to the HP. The surface of the pentagon makes 50° with the ground. Draw the top and front views of the pentagon. (20)
- V A pentagonal prism of base side 25mm and axis length 50mm rests on the HP on one of the base corners with the base edges containing it being equally inclined to the HP. The axis is inclined at 45° to the HP and the plane containing the axis is inclined at 30° to the VP. Draw the projections of the prism. (20)
- OR**
- VI A cone of base diameter 40mm and altitude 50mm rests on its base on the HP. It is cut by a section plane perpendicular to the VP and inclined at 80° to the HP, passing through the apex. Draw the sectional plan and the true shape of the section. (20)
- VII A circular hole of diameter 30mm is drilled through a vertical cylinder of diameter 50mm and height 65mm. The axis of the hole is perpendicular to the VP and meets the axis of the cylinder at right angles at a height of 30mm above the base. Draw the development of the lateral surface of the cylinder. (20)
- OR**
- VIII A cylinder of diameter 28mm pierces through a vertical cylinder of diameter 44mm. The axis of the piercing cylinder is parallel to both the HP and the VP. The axes are separated by a distance of 5mm, the axis of the horizontal cylinder being nearer to VP. Draw the projections of the cylinders. Show also the curves of intersections. (20)
- IX A hexagonal pyramid base 50mm side and axis 100mm long is resting on HP on one of its slant edges with adjacent base edges equally inclined to HP. Draw its isometric view. (20)
- OR**
- X A regular hexagonal pyramid of base edge 20mm and height 35mm rests on its base on the ground plane with one of its base edges touching the picture plane. The station point is 30mm above the ground plane and 40mm in front of the PP. The central plane is 30mm to the right of the axis. Draw the perspective projection of the pyramid. (20)

