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Question Paper Code : 41326

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

First Semester

Civil Engineering

ME 1101 — ENGINEERING GRAPHICS

(Common to all branches)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Note : Answer sheet consisting of A3 drawing sheets must be supplied to the students.

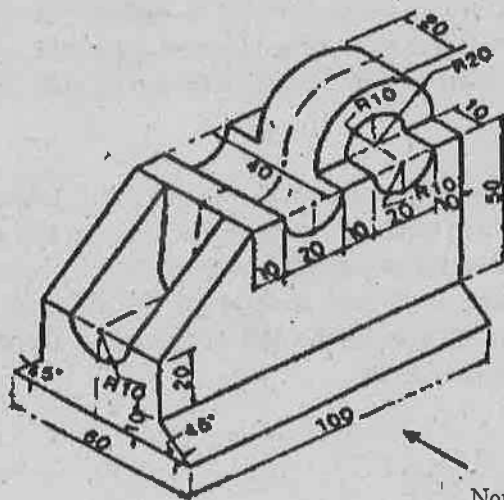
Answer ALL questions.

(5 × 20 = 100)

1. (a) A circle of 45 mm diameter rolls along the outside of another circle of 180 mm diameter. Draw the path described by a point on the circumference of the rolling circle for one complete revolution. Draw a tangent and a normal to the curve at a point 115 mm from the centre of the director circle.

Or

- (b) Draw the front, top and suitable sides view of the isometric views of the object shown in figure Q. 1 (b).



Note : All dimensions are in mm

Fig. Q. 1 (b)

2. (a) The end A of a line AB is in the HP and 40 mm in front of VP. The end B is in VP. The front view of the line makes an angle of 40° with the horizontal and has a length of 85 mm. Draw the projection and find its true inclination with HP and VP.

Or

- (b) Draw the projection of a square plane of side 40 mm rests on the ground on one of its corners with a diagonal containing that corner is include at 30° to HP and 50° to VP.
3. (a) Draw the projections of a cone, base 50 mm diameter and axis 75 mm long, lying on a generator on the ground with the top view of the axis making an angle of 45° with the HP.

Or

- (b) A square pyramid, 50 mm side of base and height 80 mm, has a corner of base on the HP and 45 mm in front of the VP. The slant edge through that corner makes an angle of 50° with the HP and is parallel to the VP. Draw the projections of the solid.
4. (a) A pentagonal pyramid of base side 30 mm and axis length 60 mm tests on its base on the HP with base edge parallel to VP It is cut by a plane perpendicular to the HP and inclined at 45° to the VP and is 12 mm away from the axis Draw its top view, sectional front view and true shape of the section.

Or

- (b) A cone of base diameter 50 mm and axis length 80 mm rests with the base on HP. A circular hole of diameter 20 mm is drilled on the surface of the cone such a way that the axis of the hole intersects with the axis of the cone at right angles and 20 mm above the base of the cone. Draw the development of the lateral surfaces of the drilled cone.
5. (a) Draw the isometric projection of a sphere of diameter 18 mm kept centrally over a frustum of a square pyramid of height 25 mm. The frustum has a base of side 35 mm and top of side 20mm.

Or

- (b) Draw the perspective view of the pentagonal prism of base side 20 mm and height 40 mm when it rests on its base on the ground plane with one of its rectangular faces parallel to and 20 mm behind the Picture plane. The station point is 45 mm in front of the PP and 60 mm above the GP. The observer is 20 mm to the left of the axis. Draw the perspective view using visual ray method.