

Evening
Date: 24/12/2015

Student Exam No. _____

GANPAT UNIVERSITY

B. TECH SEM-I&II CBCS (NEW)

REGULAR/REMEDIAL EXAMINATION-- NOV-DEC 2015

2ME102 ENGINEERING GRAPHICS

Time: 3 Hours

Total Marks: 60

- Instruction: 1 This Question paper has two sections. Attempt each section in separate answer book.
2 Make suitable assumptions wherever necessary.
3 Figures to the right indicate full marks.

Section I

- Q-1 (a) O_1ABO_2 is a four bar chain with the link O_1O_2 as the fixed link. Driving crank O_1A is 30 mm long. Driven crank O_2B is also 30 mm long. Connecting link AB is 90 mm long. Distance between O_1 and O_2 is 90 mm. Two cranks are in opposite directions. Draw the loci of points P and R for one complete revolution of the driving crank. The point P is the mid-point of the connecting link AB and the Point R is 35 mm from A on BA extended. 7
- (b) Draw hexagon using universal method. 3

OR

- Q-1 (a) A pendulum OC pivoted at O is 120 mm long. It swings 30° to the right of vertical and also 30° to the left of vertical. Insect initially at O reaches the point C , when the pendulum completes two oscillations. Draw the path of the insect, assuming motion of insect and of pendulum as uniform. 7
- (b) Draw the different types of lines used for machine drawings with their applications. 3

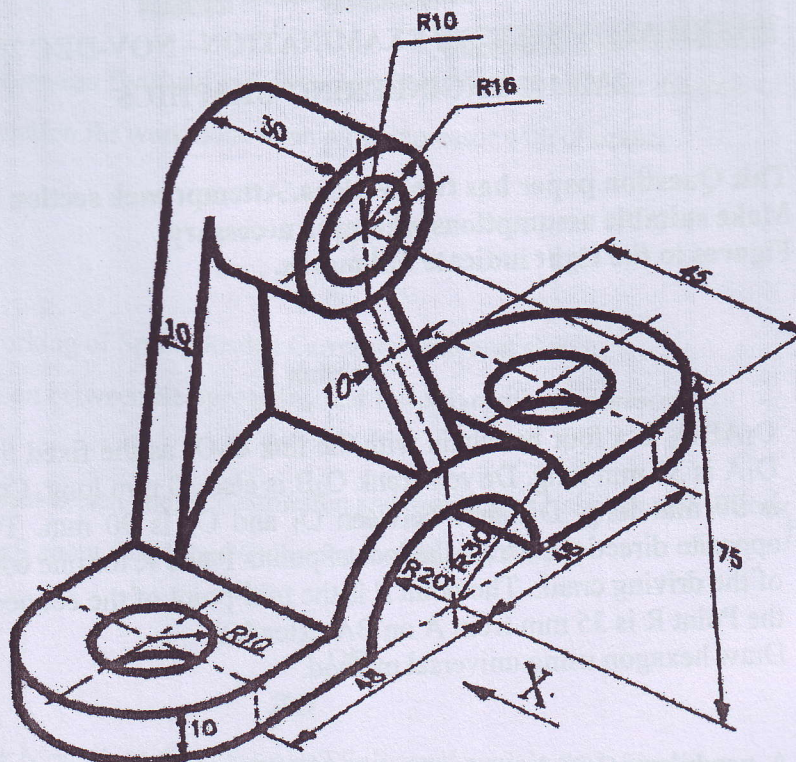
- Q-2 (a) The major axis and minor axis of the ellipse are 125 mm and 75 mm respectively. Construct an ellipse by oblong method. 5
- (b) A line EF 75 mm long, has its end E 20 mm below H.P. and 25 mm behind V.P. the end F is 50 mm below H.P. and 65 mm behind V.P. Draw the projection of line EF find its inclination with H.P. and V.P. 5

OR

- Q-2 (a) Draw a cycloid for a rolling circle of 60 mm diameter rolling along a straight line without slipping. Take initial position of the tracing point at the bottom of the vertical centre line of the rolling circle. Draw tangent and normal to the curve at a point 35 mm above the directing line. 5
- (b) The Top View and Front View of line JM 90 mm long measures 75 mm and 65 mm respectively. The Point J is 10 mm above H.P. and 15 mm in front of V.P. Draw the projection of JM and determine its inclination with H.P. and V.P. 5

Q-3

Draw (i) Elevation, (ii) Full sectional R.H.S.V. and (iii) Top Plan of the object given in Figure by using the 1st angle projection system. 10



Section II

Q-4

- (a) A square prism, edge/side of base 30 mm and height 45 mm, is resting on H.P. on one of the edges of the base. The edge on which it rests on H.P. makes 45° with V.P. The base of the prism makes 30° with H.P. or the axis of the prism makes 60° with H.P. or rectangular face containing the edge on which it rests on H.P. makes 60° with H.P. Draw the projection of the prism, when base is away from the observer or nearer to V.P. 6
- (b) Draw the projection of point of following points. 4
1. Point A is 20 mm above H.P. and 30 mm behind V.P.
 2. Point B is on H.P. and on V.P.
 3. Point C is 45 mm below H.P. and 10 mm in front of V.P.
 4. Point D is on H.P. and 30 mm behind V.P.

OR

Q-4

- (a) A cylinder, diameter of base 43 mm and height 58 mm is resting on H.P. on its base. It is cut by A.I.P. in such a way that the true shape of section is ellipse with major axis 60 mm and minor axis 43 mm. Find the inclination of A.I.P. with H.P. and draw three projections. 6
- (b) Draw the projection of point of following points. 4
1. Point E is 25 mm below H.P. and 35 mm behind V.P.
 2. Point F is 15 mm above H.P. and on V.P.
 3. Point G is 60 mm above H.P. and 30 mm in front of V.P.
 4. Point H is on H.P. and 35 mm in front of V.P.

Q-5

- (a) A square prism, side of base 50 mm and height 75 mm, is resting on H.P., on its base with all vertical faces equally inclined to V.P. Hole of 60 mm diameter is drilled centrally through the prism. Axis of the hole is perpendicular to V.P. Draw the development of only the lateral surfaces of the prism. 5
- (b) A 30°- 60° set square has its shortest side 50 mm long and is in the H.P. The top view of the set square is an isosceles triangle and the hypotenuse of the set square is inclined at an angle of 40° with the V.P. Draw the projections of the set square and find its inclination with the H.P. 5

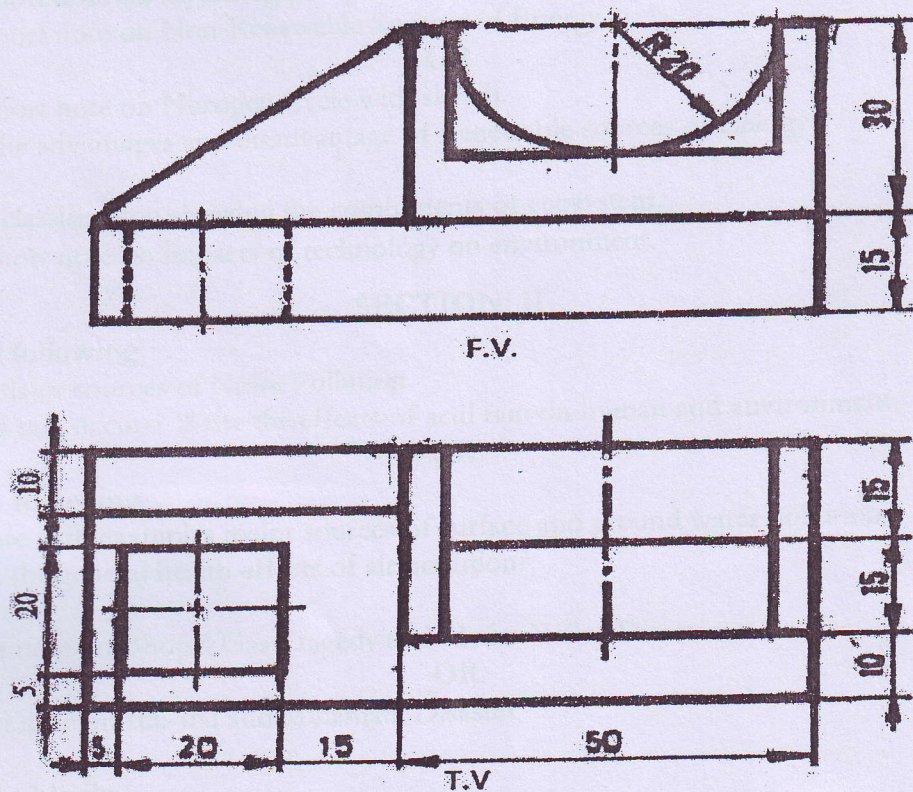
OR

Q-5

- (a) Vertical and horizontal cylinder of 90 mm (equal) diameter intersects at right angle. Draw the projections, in 1st angle system, of two cylinders showing line of intersection when axes of both the cylinders are parallel to V.P. 5
- (b) A square ABCD of 50 mm side has its corner A in the H.P., its diagonal AC inclined at 30° to the H.P. and the diagonal BD inclined at 45° to the V.P. and parallel to the H.P. Draw its projections. 5

Q-6

Draw the Isometric projection of views given in below Figure. 10



END OF PAPER