Seat No.: _____ Enrolment No._____

KADI SARVA VISHWAVIDYALAYA

MID SEMESTER EXAM

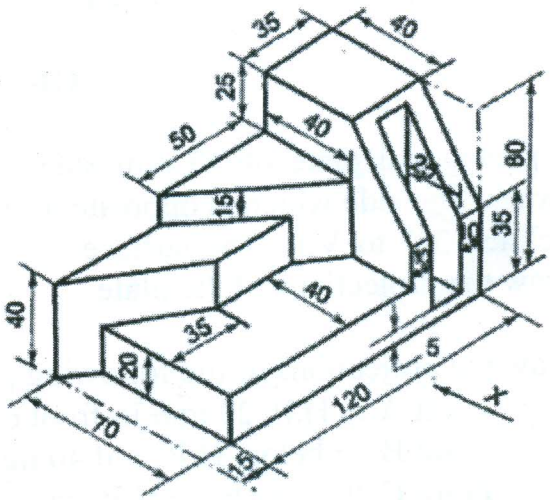
Subject Name: Engineering Graphics **Total Marks: 30**
Branch: B.E (EC/Comp/Civil) 2nd Sem. **Date: 08/03/2014**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Que:1 (a) Draw the orthographic projections in first angle projection system. **10**

a) Front view
b) Top view
c) Left-hand side view



Que:2 (a) Draw an involute of 10 mm for 5 turns. **05**

line

(b) Construct a parabola by tangent method with the base dimension 140 mm and height 100 mm. Draw the tangent and normal at any point. **05**

OR

(a) A circular disc of 72 mm diameter rotates about its center in clock wise direction. While the disc completes one revolution, an insect walks across the diameter of the disc. Plot the locus of the insect, assuming both the rotation of disc and movement of the insect uniform. **05**

(b) In slider crank mechanism, the connecting rod is 160 mm and crank is 40 mm in length. The other end point of connecting rod on the slider **05**

moves along a straight line passing through center of crank rotation. Trace the locus of (i) Any point on the slider and (ii) midpoint of the crank.

Que:3 (a) A line MN 65 mm long is inclined to H.P. by 30° and inclined to V.P. by 45°. The end M is 20 mm below H.P. and 25 mm behind V.P., point N is in the fourth quadrant. Draw its projections and find the position of the point N. **07**

(b) Draw the projections of the following points on the same x-y line. **03**

a) Point A in V.P. and 30 mm below H.P.
b) Point B 20 mm above H.P. and 20 mm behind V.P.
c) Point C on H.P. and on V.P.

OR

(a) A pentagonal plate of 30 mm side is resting on H.P. on one of its corner. The side which is opposite to the corner which is on the H.P. is inclined 30° to V.P. The surface of the plate is inclined 40° to H.P. Draw the projections of the plate. **07**

(b) Draw the projections of the following points on the same x-y line. **03**

a) Point A in H.P. 20 mm in front of V.P.
b) Point B 25 below H.P. and 40 mm behind V.P.
c) Point C 40 mm above H.P. and 10 mm in front of V.P.

Best of luck...

Enrollment No.									

KADI SARVA VISHVA VIDYALAYA

LDRP INSTITUTE OF TECHNOLOGY AND RESEARCH GANDHINAGAR

B. E. Semester- I mid- Semester Examination

Subject Name: Engineering Graphics (CC111)

Date: 11-10-2014 **Time: 10:30 a.m to 12:00 noon.**
Branch: B.E 1ST (ME/AUTO/EE/IT) **Max. Marks: 30**

Instructions:

1. **Make suitable assumption whenever necessary.**
2. **Figures to the right indicate full marks.**

Q.1 Draw front view, top view & side view by first angle method.(See fig.-1) **(10)**

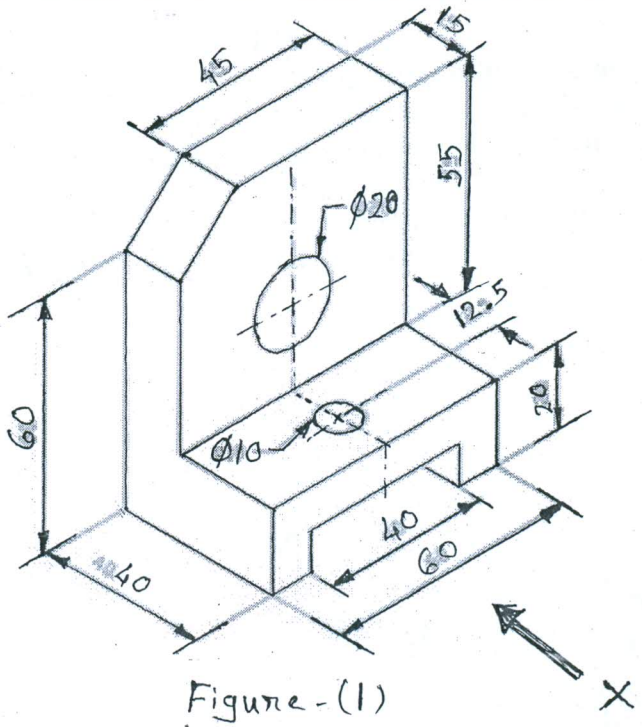


Figure-(1)

Q.2(A) A pendulum OC pivoted at O, is 120mm long. Its swings 30^0 to the right of vertical & also 30^0 to the left of the vertical. Insect, initially at O reaches the point C, when the pendulum completes 1.5 oscillations. Draw the path of insect. Assuming motion of insect and of pendulum as uniform. **(5)**

Q.2(B) Prove by means of drawing that, if the diameter of the rolling circle is the half the diameter of directing circle, the hypocycloid is a straight line. Assuming the data. **(5)**

OR

Q.2(A) OAB is a slider-crank mechanism. Slider B is sliding on a straight path passing through O as shown in figure 2. Crank OA is 30mm and rotates in anti-clockwise direction and length of connecting rod AB is 100 mm. A Rod NP of 30 mm length is attached to AB such that AN = 40mm. and NP is perpendicular to AB as shown. Draw locus of point P for one complete revolution of the crank.(See figure-2) **(5)**

Q.2(B) Construct an archemedian spiral of one convolution, given the maximum radius=55mm & minimum radius=31mm.Draw tangent and normal to the curve at any point. **(5)**

Q.3(A) The distance between end projectors of a straight line PQ is 130mm.Point P is 40 mm below HP and 25 mm in front of VP. Point Q is 75 mm above HP& 30mm behind VP. Draw the projection of a line and find out its true length and inclination with HP and VP. **(5)**

Q.3(B) A line PQ 70 mm long has its end P in VP & end Q in HP. Line is inclined to HP by $60^0$and VP by30^0.draw the projections. **(5)**

OR

Q.3(A) A regular pentagon ABCDE, of 30mm sides, has its side AB in the VP and inclined at angle of 30^0 to the HP. The corner A is 15 mm above HP and the corner D is 20 mm in front of VP. Draw the projections of the plane and find its inclination with the VP. **(5)**

Q.3(B) A semicircular thin plate, of 60 mm diameter, rests on the HP on its diameter, which is inclined at 45^0 to the VP & the surface is inclined at 30^0 to the HP. Draw the projections of the plane. **(5)**

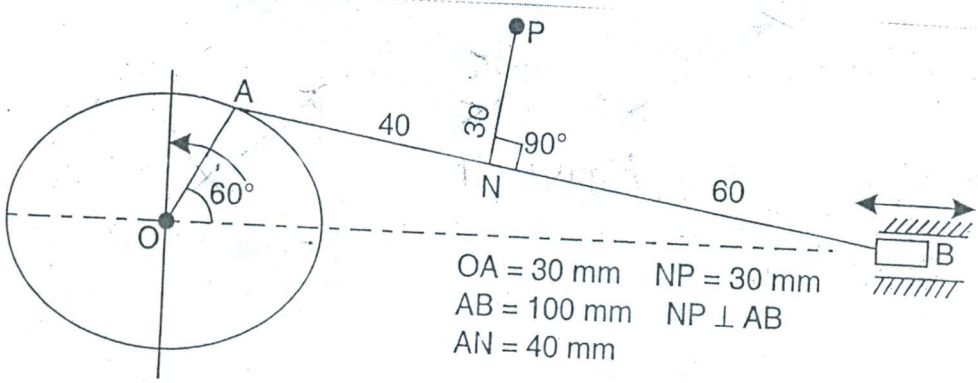


Figure - 2

BEST OF LUCK