

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-I & II (NEW) EXAMINATION – SUMMER 2024

Subject Code:3110013

Date:01-07-2024

Subject Name:Engineering Graphics & Design

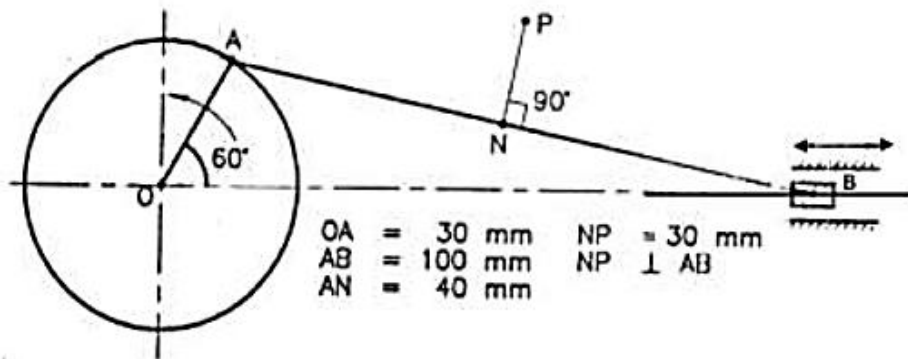
Time:02:30 PM TO 05:30 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- | | MARKS |
|--|-------|
| Q.1 (a) Draw regular square, pentagon and hexagon by UNIVERSAL METHOD of 35 mm side. | 03 |
| (b) The distance between Ahmedabad and Surat is 200 km. In a railway map it is represented by a line 5 cm long. Find it's R.F. Draw a diagonal scale to show single km. And maximum 600 km. Indicate on it following distances. (1) 222 km (2) 569 km. | 04 |
| (c) A pole is of a shape of half hexagon and semicircle. A string is to be wound having length equal to the pole perimeter Draw path of free end P of string when wound completely.
(Take hexagon 30 mm sides and semicircle of 60 mm diameter.) | 07 |
| Q.2 (a) (1) The top view of a right cylinder resting on HP on its base is _____
(2) The development of cylinder is a _____
(3) The isometric projection of a sphere is a _____ | 03 |
| (b) Draw Development of lateral surfaces of following solids.
(1) Cylinder (2) Cone (3) Pentagonal Prism (4) Cube | 04 |
| (c) Rod AB, 100 mm long, revolves in clockwise direction for one revolution. Meanwhile point P, initially on A starts moving towards B and reaches B. Draw locus of point P. | 07 |
| OR | |
| (c) Draw loci of point 'P' given in figure | 07 |

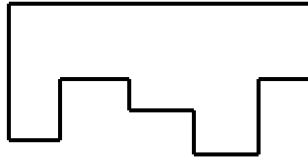


- Q.3 (a) Draw following projection of points: 03
- (1) Point 'A' is 20 mm above HP and 25 mm Infront of VP.
 - (2) Point 'B' is 35 mm behind VP and 30 mm above HP.
 - (3) Point 'C' is in the HP and 15 mm Infront of VP.

- (b) Draw projections of line AB=80 mm inclined to 60° HP & 30° VP and parallel to PP. 04
- (c) Line AB 75mm long makes 45° inclinations with VP while it's FV makes 55° . End A is 10 mm above HP and 15 mm in front of VP. If line is in 1st quadrant draw its projections and find it's inclination with HP. 07

OR

- Q.3 (a) Draw Parallel, Chain and Combined Dimensioning for following figure. 03

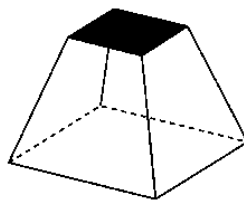
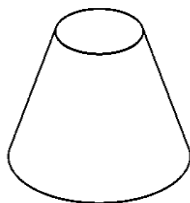


- (b) Write at least one use of following drawing instruments: 04
- | | |
|------------------|------------------|
| (1) Mini drafter | (5) Divider |
| (2) Protector | (6) Roll-N-Draw |
| (3) Set squares | (7) T-square |
| (4) Compass | (8) French curve |
- (c) A room is of size 6.5m L, 5m D, 3.5m high. An electric bulb hangs 1m below the center of ceiling. A switch is placed in one of the corners of the room, 1.5m above the flooring. Draw the projections and determine real distance between the bulb and switch. 07

- Q.4 (a) Draw symbol of first angle and third angle projection method. 03
- (b) Draw Isometric view of Circle of 50mm diameter, Pentagon of 30 mm side, a cube of 50mm side and a hexagon of 25 mm side. 04
- (c) A regular pentagon of 30 mm sides is resting on HP on one of its sides with its surface 45° inclined to HP. Draw its projections when the side in HP makes 30° angles with VP. 07

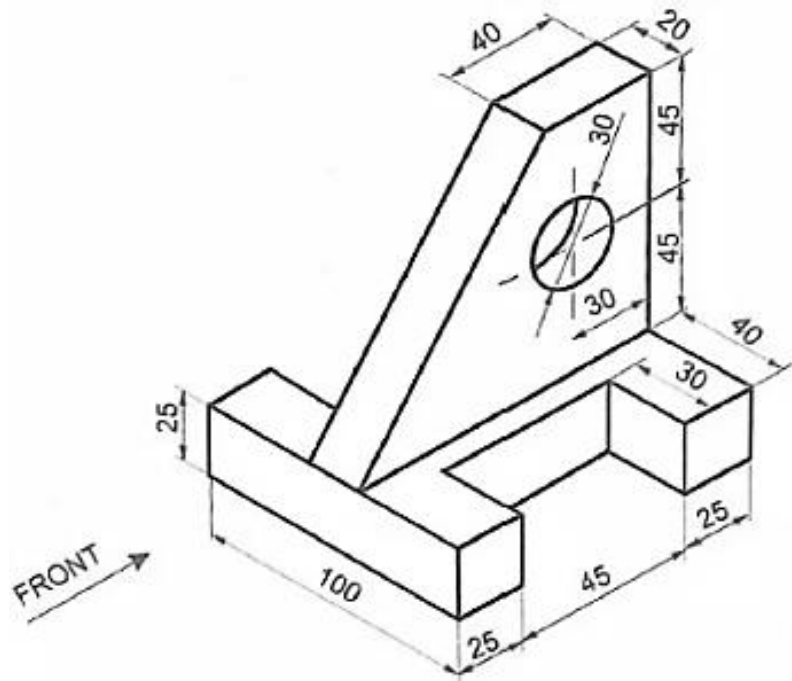
OR

- Q.4 (a) Identify following solids: 03
- (1) (2) (3)



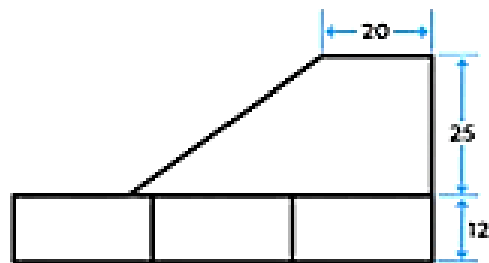
- (b) A rectangle ABCD 60 mm x 40 mm, is parallel to HP with one of its sides inclined at 30° to VP and the end of the side near to VP is 15 mm in front of the VP and 30 mm above HP. Draw its projections. 04
- (c) A square pyramid, side of base 30 mm and height 50 mm, is resting on HP with a side of its base. Draw the projections if the axis is inclined to 45° to HP and parallel to VP 07

- Q.5 (a) What is meant by ARRAY in AUTOCAD? What are types of ARRAYs? 04
- (b) Draw orthographic projections of given figure (FV, TV, RHSV) as per first angle projection method. 10

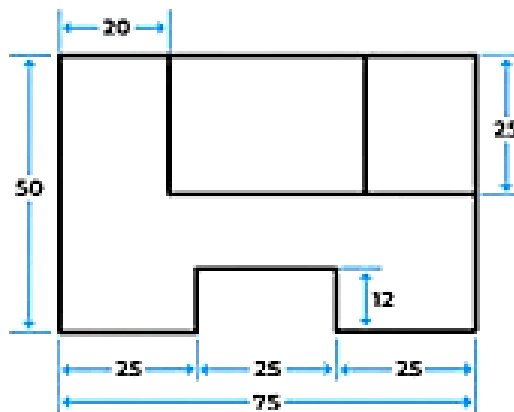


OR

- Q.5 (a) Write down different software used in design. 04
 (b) Draw isometric scale for length of 100mm. and draw isometric view for given 10
 figure.



Front View



Top View
