Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–I & II(NEW)EXAMINATION – SUMMER 2022

Subject Code:2110013 Date:10-08-2022

Subject Name:Engineering Graphics

Time:10:30 AM TO 01:30 PM Total Marks:70

Instructions:

1. **Question No. 1 is compulsory. Attempt any four out of remaining Six questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1 Objective Question (MCQ) **Mark**

(a) **07**

1. Which one of the following is not a reduction Scale?
(a) 1:1 (b) 1:200 (c) 5/320 (d) 5:6

2. In the orthographic projections, F.V. is projected on
(a) H.P. (b) V.P. (c) XY (d) GL

3. A square plate of negligible thickness is inclined to HP and parallel to V.P. The front view will appear as
(a) rhombus (b) square (c) line (d) rectangle

4. The FV of a elliptical plane may be
(a) Ellipse (b) Line (c) Circle (d) All of these

5. When the line is parallel to VP and perpendicular to HP, we can get its true length in _____.
(a) Top view (b) Front view
(c) Side view (d) Front view & Side view

6. Which type of line is a part of a dimension?
(a) Break lines (b) Phantom lines
(c) Extension lines (d) Cutting plane lines

7. The type of line used to indicate a cutting plane is
(a) Dashed (b) long dashed dotted
(c) long dashed double dotted (d) continuous freehand

(b) **07**

1. A square plane is inclined to HP & perpendicular to VP its elevation appears as
(a) Rhombus (b) Square (c) Straight line (d) Rectangle

2. A French curve is used to draw
(a) Circles (b) Ellipses (c)Smooth curves (d) Polygon

3. A tetrahedron has ____equal rectangular faces.
(a) 0 (b) 2 (c) 3 (d) 4

4. The gear tooth profile is in the form of
(a) parabola (b) involute (c) spiral (d) helix

5. The angle between isometric axis is
(a) 30º (b) 90º (c) 120º (d) 180º

6. A cone base diameter 40 mm and axis 60 mm is cut by a plane parallel to the base then the true shape will be
(a) Parabola (b) Circle
(c) Isosceles Triangle (d) Regular Triangle

7. When a line is inclined to VP and parallel to HP, the top view will be _____ to xy.

(a) parallel (b) perpendicular

(c) inclined at angle (d) none of these

Q.2	**(a)**	List the different types of scales and write their applications.	**03**
	(b)	The distance between two towns is 250 km and is represented by a line of length 50mm on a map. Construct a scale to read 600 km and indicate a distance of 530 km on it.	**04**
	(c)	Draw the cycloid of a circle of 46 mm diameter. Also, show tangent and normal at any point on it.	**07**
Q.3	**(a)**	Differentiate between Epitrochoid and Hypotrochoid.	**03**
	(b)	Draw a parabola having 60 mm distance between focus and directrix.	**04**
	(c)	A line AB, 65mm long has its end A 20 mm above H.P. and 25 mm in front of VP. The end B is 40 mm above H.P. and 65 mm in front of V.P. Draw the projections of AB and shows its inclination with H.P.	**07**
Q.4	**(a)**	What are projection, projector and plane of projection?	**03**
	(b)	A Pentagonal plane with a 30 mm side has an edge on the HP, the surface of the plane is inclined at 45° to the HP. Draw its Projections.	**04**
	(c)	A circle of 50 mm diameter is resting on HP on end A of its diameter AC which is 30° inclined to HP while its TV is 45° inclined to VP. Draw its Projections.	**07**
Q.5	**(a)**	Differentiate between prism and pyramid.	**03**
	(b)	Draw the projections of a cube of 50 mm side when it has one face in VP and an adjacent face inclined at 30° to HP. The longer edge of the later face is on HP.	**04**
	(c)	A hexagonal pyramid, side of base 30 mm and height 63 mm, is resting on HP on its base with two edges of the base parallel to VP. It is cut by horizontal section plane passing through a point on axis 27 mm from the vertex. Draw projections with the section.	**07**
Q.6	**(a)**	Write the importance of sectional view.	**03**
	(b)	Differentiate between first angle projection and third angle projection.	**04**
	(c)	Draw (i) FV and (ii) Sectional RHS view of the object shown in Fig. 1 using 3rd angle projection method.	**07**
Q.7	**(a)**	Distinguish between isometric projection and isometric view.	**03**
	(b)	Draw an isometric view of Frustum of Hexagonal Pyramid having 35 mm base side 20 mm top side and 80mm long axis, resting on its base on the HP with an Edge of the base parallel to the VP?	**04**
	(c)	Draw the isometric view of the object shown in Fig. 2.	**07**

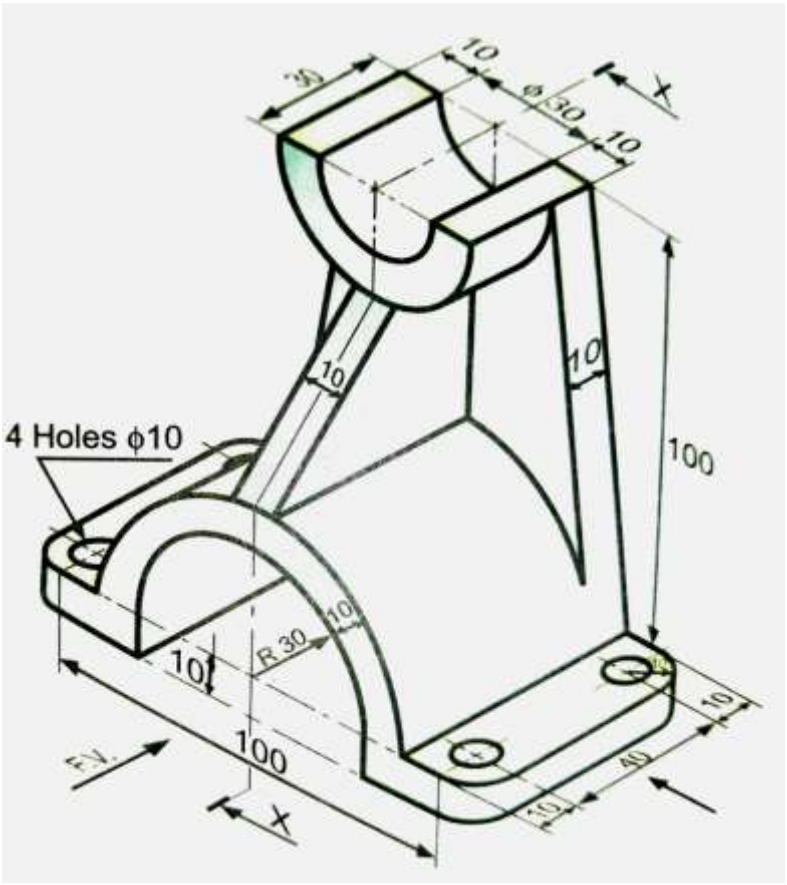
4 Holes ϕ10
10
30
ϕ30
X
10
10
10
100
R 30
10
10
100
F.V.
X
10
40
10

Fig. 1

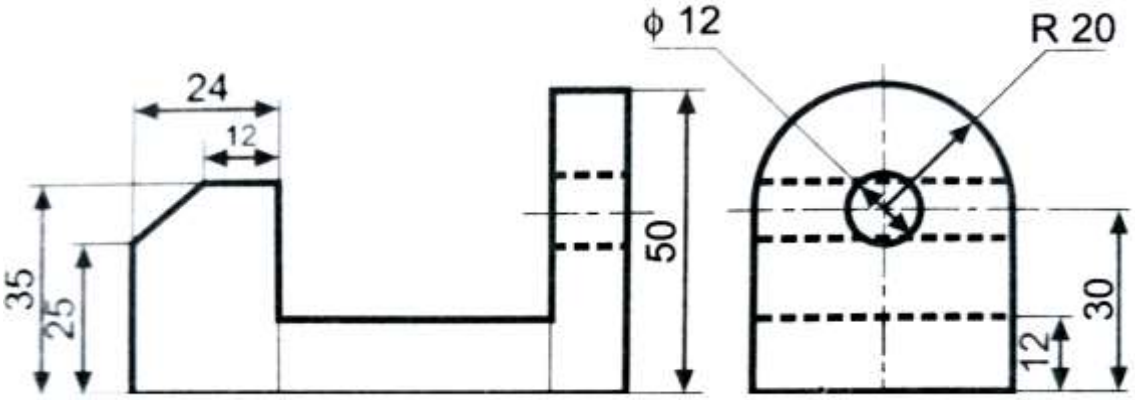
ϕ 12
R 20
24
12
35
25
50
30
12

Fig. 2

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