

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-III (NEW) EXAMINATION – WINTER 2024****Subject Code:3132001****Date:26-11-2024****Subject Name: Industrial Drafting****Time:10:30 AM TO 01:00 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) Illustrate the conventional symbols used to represent different materials in engineering drawings, such as water, concrete, and Glass.	03
	(b) With the help of neat sketches, differentiate between the aligned and unidirectional systems of dimensioning in drafting.	04
	(c) Differentiate between first angle and third angle projection methods. Include the symbols used for each projection method.	07
Q.2	(a) What is a T-bolt and how is it used?	03
	(b) What are the key differences between permanent and temporary fasteners?	04
	(c) Enlist various methods of preventing rotation of a bolt while screwing a nut on or off it. Explain any one of them with rough sketch.	07
	OR	
	(c) Explain the purpose of an assembly drawing in engineering design. Describe the different types of assembly drawings and their applications.	07
Q.3	(a) Sketch the conventional representation of the following materials (a) splined shaft, (b) bearing, (c) square on shaft	03
	(b) Define and illustrate the following terms in the context of screw threads: Flank, Lead, Minor Diameter, and Major Diameter.	04
	(c) Two square prisms, one with a 35 mm base and 65 mm axis, and the other with a 20 mm base and 65 mm axis, intersect perpendicularly, with their axes bisecting each other. Both prisms have faces equally inclined to the VP. Draw the front and top views, illustrating the curves of intersection.	07
	OR	
Q.3	(a) Define the following terms with respect to screw threads: (a) pitch (b) pitch diameter, (c) major diameter, (d) minor diameter	03
	(b) Explain the full section and half section with suitable examples.	04
	(c) A vertical cone with an 90 mm base diameter and a 110 mm axis length is intersected by a horizontal cylinder of 50 mm diameter. The cylinder's axis is 30 mm above the cone's base, parallel to the vertical plane (VP), and 7 mm away from the cone's axis. Draw the front and top views, showing the lines of intersection.	07
Q.4	(a) Why geometrical tolerances are required during assembly process?	03
	(b) Differentiate between keys and cotter using neat sketch.	04
	(c) List all the types of Square thread and Explain anyone with neat sketch	07
	OR	
Q.4	(a) What is a T-bolt and how is it used?	03
	(b) What is the use of key? List all the types of keys. Explain any one key with neat sketch	04
	(c) Describe the purpose of a eye foundation bolt and provide a rough sketch.	07

- Q.5** (a) Define the terms: (a) basic size, (b) limits, (c) allowance. **03**
(b) What is surface roughness, and how is it depicted in engineering drawings? **04**
(c) Explain the various commands in the modify tool box of AUTO CAD. **07**
- OR**
- Q.5** (a) Enlist various locking arrangements of nut. **03**
(b) Differentiate between clearance fit and transition fit. **04**
(c) Explain the various commands in the draw tool box of AUTO CAD. **07**
