Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 3 – EXAMINATION – SUMMER 2026

Subject Code: 3132001 **Date: 17/06/2026**

Subject Name: Industrial Drafting

Time: 02:30 PM TO 05:00 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.**

Q.1	**(a)**	Explain **machine drawing, part drawing, and assembly drawing** with examples.	**03**
	(b)	Draw neat sketches of conventional representation for: (i) Brick (ii) Rubber (iii) Steel (iv) Insulation material	**04**
	(c)	Explain **first angle projection and third angle projection** with symbols and differences.	**07**
Q.2	**(a)**	Draw a neat sketch of Aligned & Unidirectional dimensioning.	**03**
	(b)	Explain the full section and half section with suitable examples.	**04**
	(c)	Explain various commands used in annotation toolbox of AUTOCAD.	**07**
		OR	
Q.2	**(c)**	Explain the various commands in the modify tool box of AUTO CAD.	**07**
Q.3	**(a)**	Define **pitch, lead, crest, and root** of screw thread.	**03**
	(b)	State conventional representation of the following: • External threads • Internal threads • Ball bearing • Keyway	**04**
	(c)	Classify keys and draw free hand sketches of a Gib's head key and a wood ruff key	**07**
		OR	
Q.3	**(a)**	Draw **ISO metric thread profile**.	**03**
	(b)	Draw **ACME thread** and mention its applications.	**04**
	(c)	Explain **knuckle joint** with neat labeled sketch and its applications.	**07**
Q.4	**(a)**	Why hexagonal shape is preferred to square one for nuts?	**03**
	(b)	Differentiate between **rigid coupling and flexible coupling**.	**04**

(c) A **cylinder of diameter 50 mm penetrates a vertical prism (base 60 mm)** such that their axes intersect at right angles. **07**
Draw projections showing **curve of intersection**.

OR

Q.4 **(a)** **03**

List different **types of locking arrangements of nuts**.

(b) Draw symbols for geometrical tolerances: **04**

- Parallelism
- Concentricity
- Straightness
- Flatness

(c) A **cone (base 70 mm, height 90 mm)** is penetrated by a horizontal cylinder (diameter 40 mm). **07**
Draw projections showing **lines of intersection**.

Q.5 **(a)** Explain **limits, fits, and tolerances** with suitable examples. **03**

(b) Differentiate between **clearance fit, interference fit, and transition fit**. **04**

(c) Explain Rag foundation bolt with neat sketch. **07**

OR

Q.5 **(a)** Define: **03**

- Basic size
- Upper deviation
- Lower deviation

(b) Explain **surface roughness symbols and their significance**. **04**

(c) Explain Lewis foundation bolt with neat sketch. **07**

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