

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023****Subject Code:3132001****Date:16-01-2024****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     |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Q.1</b> | (a) Define following terms:<br>Limits, Fits & Tolerance.                                                                                                                                                                                                                                    | <b>03</b> |
|            | (b) Draw a neat sketch of Aligned & Unidirectional dimensioning.                                                                                                                                                                                                                            | <b>04</b> |
|            | (c) What are the different types of Drawings? Explain Machine Drawing and Part Drawing with neat sketch.                                                                                                                                                                                    | <b>07</b> |
| <b>Q.2</b> | (a) Draw the conventional representation of Steel, Water, Wood.                                                                                                                                                                                                                             | <b>03</b> |
|            | (b) Explain the full section and half section with suitable examples.                                                                                                                                                                                                                       | <b>04</b> |
|            | (c) Explain various commands used in annotation toolbox of AUTOCAD.                                                                                                                                                                                                                         | <b>07</b> |
|            | <b>OR</b>                                                                                                                                                                                                                                                                                   |           |
|            | (c) Enlist the various commands of modify toolbox of AUTOCAD. Explain any three of them by giving suitable example.                                                                                                                                                                         | <b>07</b> |
| <b>Q.3</b> | (a) Sketch the conventional representation of the following materials (a) splined shaft, (b) bearing, (c) square on shaft                                                                                                                                                                   | <b>03</b> |
|            | (b) Differentiate First Angle and Third Angle Projection Methods of Drawing.                                                                                                                                                                                                                | <b>04</b> |
|            | (c) With the help of sketches, show how the geometrical tolerances are indicated, as given in standard, for the following cases: (a) parallelism, (b) perpendicularity, (c) symmetry and (d) radial run out.                                                                                | <b>07</b> |
|            | <b>OR</b>                                                                                                                                                                                                                                                                                   |           |
| <b>Q.3</b> | (a) What do you mean by unilateral and bilateral tolerance?                                                                                                                                                                                                                                 | <b>03</b> |
|            | (b) What is an assembly drawing? List out the various types of assembly drawings.                                                                                                                                                                                                           | <b>04</b> |
|            | (c) Classify keys and draw free hand sketches of a Gib's head key and a wood ruff key                                                                                                                                                                                                       | <b>07</b> |
| <b>Q.4</b> | (a) What is a machine shop drawing and how is it different from machine drawing?                                                                                                                                                                                                            | <b>03</b> |
|            | (b) Define the following terms with respect to screw threads: (a) pitch (b) pitch diameter, (c) major diameter, (d) minor diameter                                                                                                                                                          | <b>04</b> |
|            | (c) A square prism 35 mm base sides and 70mm axis is completely penetrated by another square prism of 30 mm sides and 70 mm axis, horizontally. Both axes Intersects & bisect each other. All faces of prisms are equally inclined to VP. Draw projections showing curves of intersections. | <b>07</b> |

**OR**

**Q.4 (a)** A vertical cylinder of 60 mm diameter is completely penetrated by another cylinder of 50 mm diameter, their axes bisecting each other at right angles. Draw their projections showing curves of penetration, assuming the axis of the penetrating cylinder to be parallel to the VP. The axis of both the cylinders are 80mm. **03**

**(b)** Why hexagonal shape is preferred to square one for nuts? **04**

**(c)** Explain feather keys with detailed sketch. **07**

**Q.5 (a)** Where and why the woodruff key is used? **03**

**(b)** Explain various type of fits with neat sketch. **04**

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

**OR**

**Q.5 (a)** Explain Surface roughness. **03**

**(b)** Differentiate between keys and cotter using neat sketch. **04**

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

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