

GUJARAT TECHNOLOGICAL UNIVERSITY

B.VOC- SEMESTER-I EXAMINATION – WINTER 2024

Subject Code:21110302

Date:23-12-2024

Subject Name: General Mechanical Engineering

Time:10:30 AM TO 12:30 PM

Total Marks:50

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) Define thermodynamic system. Explain types of system with examples.	05
	(b) What is thermodynamic process? Explain any two thermodynamic processes with suitable example.	05
Q.2	(a) State second law of thermodynamics. Explain application of second law of thermodynamics.	05
	(b) Derive the equation of work done of Isothermal Process.	05
OR		
	(b) Explain Carnot cycle.	05
Q.3	(a) What do you mean by non-ferrous metals? Name any four with their application.	05
	(b) Differentiate between thermo-plastic and thermo-setting material.	05
OR		
Q.3	(a) Give detail classification of engineering materials	05
	(b) Write applications of silica material.	05
Q.4	(a) Explain parallelogram method and derive equation of resultant.	05
	(b) Explain law of triangle of forces to derive resultant force.	05
OR		
Q.4	(a) What is moment and couple? Differentiate it with suitable example.	05
	(b) Explain types of forces with suitable example.	05
Q.5	(a) Draw and explain stress – strain diagram of brittle material.	05
	(b) Define: Bulk Modulus, Modulus of Elasticity, Modulus of Rigidity, Thermal Strain, Volumetric Strain.	05
OR		
Q.5	(a) Define stress. Explain tensile, compressive and shear stress with stress distribution diagram.	05
	(b) Explain various types of stresses.	05
