

VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY (Autonomous)
FIRST SEMESTER B.TECH DEGREE EXAMINATION DECEMBER 2025 (2025 SCHEME)
Course Code: 25VJGCEST104

Course Name: INTRODUCTION TO MECHANICAL ENGINEERING & CIVIL ENGINEERING
Max. Marks: 60 **Duration: 2 Hours 30 Minutes**

- Use separate answer sheets for Part 1 and Part 2
- No separate minimum marks are required to pass.

PART 1 - INTRODUCTION TO MECHANICAL ENGINEERING (30 Marks)

PART 1 - A
Module (1 & 2)

<i>Q.No.</i>	<i>Answer all questions. Each question carries 3 marks</i>	<i>CO</i>	<i>Marks</i>
1	Explain psychrometry. Differentiate between specific humidity and relative humidity.	CO2	3
2	What do you understand by the term "CRDI" in the context of IC engines?	CO2	3
3	Define the term rolling and explain its purpose in metal forming	CO3	3
4	List any six operations performed on a lathe.	CO3	3

PART 1 - B
Module (1 & 2)

Answer any one full question from each module. Each question carries 9 marks

Module 1

5	a. Citing real life examples, discuss different types of Thermodynamic systems?	CO1	3
	b. State how a two-stroke engine varies from a four-stroke engine.	CO2	6
6	a. Describe any three desirable properties of refrigerants.	CO2	3
	b. What do you understand by MPFI system? Discuss its role in improving vehicle performance.	CO2	6

Module 2

7	a. Describe any three commonly used metal joining techniques	CO3	3
	b. Explain the principle and operation of a ball bearing using a labeled sketch.	CO1	6
8	a. Illustrate and explain the operation of a reciprocating pump with a clear schematic diagram.	CO1	6
	b. Mention the different types of gears used for transmitting power.	CO1	3

PART 2 - INTRODUCTION TO CIVIL ENGINEERING (30 Marks)

PART 2 - A
Module (3 & 4)

<i>Q.No.</i>	<i>Answer all questions. Each question carries 3 marks</i>	<i>CO</i>	<i>Marks</i>
1	Explain the significance of Water Resource Engineering in the field of Civil Engineering.	CO4	3
2	Explain the significance of Structural Engineering in the field of Civil Engineering.	CO4	3
3	List out the different tests on bricks.	CO6	3
4	List out the different grades of cement.	CO6	3

PART 2 - B
Module (3 & 4)

Answer any one full question from each module. Each question carries 9 marks

Module 3

5	a. Explain the different types of buildings according to the character of occupancy as per the National Building Code (NBC) of India	CO5	6
	b. Mention any three functions of a building foundation.	CO6	3
6	a. Explain the role of NBC and KMBR norms in building rules and regulations prevailing in our country.	CO5	6
	b. List out the geological, physical and chemical classifications of stones.	CO6	3

Module 4

7	a. List out the uses of steel in building constructions?	CO6	3
	b. Briefly explain the procedure for determining compressive strength of a concrete cube.	CO6	6
8	a. List out the ingredients of reinforced cement concrete.	CO6	3
	b. Briefly explain the types of weathering of rocks.	CO6	6
