

Reg. No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2023

First Semester

CM22151 – BASIC CIVIL AND MECHANICAL ENGINEERING*(Civil Engineering)***(Regulation 2022)****TIME: 3 HOURS****MAX. MARKS: 100**

		RBT LEVEL
CO 1	To provide the students an illustration of the significance of the Civil and Mechanical Engineering Profession in satisfying the societal needs.	2
CO 2	To help students acquire knowledge in the basics of surveying and the materials used for construction.	3
CO 3	To provide an insight to the essentials of components of a building and the infrastructure facilities.	2
CO 4	To explain the component of power plant units and detailed explanation to IC engines their working principles.	2
CO 5	To explain the Refrigeration & Air-conditioning system.	2

PART- A (20 x 2 = 40 Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. List the classification of buildings.	1	2
2. Define Floor Space Index (FSI).	1	2
3. What is meant by buildup area?	1	2
4. What are the sub-disciplines in Mechanical Engineering?	1	2
5. Differentiate plane and geodetic surveying.	2	2
6. Convert the following:	2	2
a) 120°28' (WCB to RB)		
b) S37° 45'W (RB to WCB)		
7. What is M-sand?	2	2
8. What are the qualities of good a brick?	2	2
9. List down the types of shallow foundation.	3	2
10. What is Lintel?	3	2
11. Differentiate between gravity and earthen dam.	3	2
12. Differentiate Cantilever and simply supported beam.	3	2
13. Write down the classification of turbines.	4	2
14. What is a Cooling tower? List out its uses.	4	2
15. What is reciprocating pump?	4	2

16. What is priming?	4	2
17. Write the principle of an air conditioner used in our homes.	5	2
18. Name the commonly used refrigerants	5	2
19. What are the important properties (at least five) of refrigerant ?	5	2
20. Define two ton of refrigeration.	5	2

PART- B (5 x 10 = 50 Marks)

	Marks	CO	RBT LEVEL
21. (a) Discuss briefly about (A) Geotechnical Engineering & (B) Water Resources Engineering (OR)	(10)	1	3
(b) Discuss the contribution of Mechanical Engineers to the welfare of society.	(10)	1	3
22. (a) Explain about different type of compasses and its limitations. (OR)	(10)	2	3
(b) What are the different types of concrete used for building construction? Brief them.	(10)	2	3
23. (a) Enumerate the different types of bonds used in Stone masonry. Explain them briefly. (OR)	(10)	3	3
(b) Discuss different methods of Roof top rainwater harvesting.	(10)	3	3
24. (a) Discuss the working principle of the Double-acting Reciprocating pump with a neat sketch. (OR)	(10)	4	3
(b) Explain the principle of working of a two -stroke diesel engine with suitable sketches.	(10)	4	3
25. (a) Analyze the operating characteristics of Centrifugal Pump. Describe its construction and working principle with a neat sketch. (OR)	(10)	5	4
(b) Explain in details about the types of Refrigeration system used in domestic applications.	(10)	5	4

PART- C (1 x 10 = 10 Marks)

(Q.No.26 is compulsory)

	Marks	CO	RBT LEVEL
26. What are Green Buildings? Do you think innovation in green buildings can help address the carbon challenge and harness an opportunity for sustainable development? Discuss.	(10)	2	4
