

Reg. No.

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

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

First Semester

CM18151– BASIC CIVIL AND MECHANICAL ENGINEERING**(Regulation 2018)****TIME:3 HOURS****MAX. MARKS: 100**

- CO 1** The students will be able to gain basic knowledge in surveying and common civil engineering materials.
- CO 2** The students will be able to understand the building foundation, superstructures and bridges and dams
- CO 3** The students will be able to gain knowledge of various power plants and their main components.
- CO 4** The students will be able to understand the working principles of two/four stroke internal combustion engines used in automotive vehicles.
- CO 5** The students will be able to have exposure to domestic refrigerator and air conditioners.

PART- A(10x2=20Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Write down the principles of surveying.	1	2
2. What are the substitutes used for natural sand due to its scarcity?	1	2
3. What is beam? How are beams classified based on the supporting condition?	2	2
4. What is meant by multipurpose dam?	2	2
5. What is a Cooling tower? List out its uses	3	2
6. Write down the classification of turbines.	3	2
7. Which engine will you select for a truck? Justify your selection.	4	2
8. Draw the neat sketch of Diesel cycle.	4	2
9. Write down the classification of refrigerants with examples.	5	2
10. Define one ton of refrigeration.	5	2

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a) (i) Briefly explain about the classifications of surveying.	(07)	1	3
(ii) What is Ranging? Explain the types of ranging with neat sketch.	(07)	1	3
(OR)			
(b) Explain the various steps involved in manufacturing of concrete.	(14)	1	3

12. (a) What is shallow foundation? Explain its types with neat sketch. (14) 2 3
 (OR)
 (b) Enumerate the different types of bonds used in Brick masonry. Explain them briefly with neat sketch. (14) 2 3
13. (a) Why Steam Power Plants are predominantly used for power generation? Describe its construction and working principle with a neat sketch. (14) 3 3
 (OR)
 (b) Discuss the working principle of the Centrifugal pump with a neat sketch. (14) 3 3
14. (a) Discuss briefly about the working principle of Petrol and Diesel engines. (14) 4 3
 (OR)
 (b) Explain the principle of working of a two -stroke diesel engine with suitable sketches. (08) 4 3
15. (a) Explain the important components of a simple vapour compression refrigeration system with a sketch. (14) 5 3
 (OR)
 (b) Sketch the layout of window air conditioner and explain the working principle, stating clearly the functions of major components with merits and demerits. (14) 5 3

PART- C (1x 10=10 Marks)

(Q.No.16 is compulsory)

- | | | Marks | CO | RBT
LEVEL |
|-----|--|-------|----|--------------|
| 16. | Explain in detail about the measurement of land with different survey instruments in real world practical condition. | (10) | 1 | 4 |
