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**B.E./ B.TECH. DEGREE EXAMINATIONS, MAY 2024**

First Semester

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

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Summarize the importance of Civil and Mechanical engineering towards the welfare of society.	2
CO 2	Apply the principles and the different methods of surveying and discuss the properties and uses of various construction materials.	3
CO 3	Describe about the building components and common infrastructure.	2
CO 4	Explain about the various power plants and the working principles of internal combustion engines used in automotive vehicles.	2
CO 5	Elaborate the working of domestic refrigerator and air conditioner.	2

**PART- A(20x2=40Marks)**

(Answer all Questions)

	CO	RBT LEVEL
1. Define floor space index.	1	2
2. List the classification of buildings.	1	2
3. What are the sub-disciplines in Mechanical Engineering?	1	2
4. Give an overview of Mechanical Engineering.	1	2
5. How the contour lines are drawn?.	2	2
6. What are the different types of chains available to measure the linear distance?	2	2
7. What is the role of steel in concrete? Narrate it.	2	3
8. What is meant by setting time?	2	2
9. Differentiate shallow and deep footing.	3	2
10. List the merits of the rain water harvesting.	3	3
11. What is meant by settlement of the soil?	3	2
12. What is the purpose of dam? List its types.	3	2
13. Why surge tank is needed in Hydro-electric Power Plants?	4	3
14. Why engine cooling system is needed in Diesel Power Plants?	4	3
15. Which engine will you select for a truck? Justify your selection.	4	3
16. Why flywheel is used in IC engines?	4	2
17. Define one ton of refrigeration.	5	2

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|-----|--|---|---|
| 18. | Differentiate between Refrigeration and Air conditioning.                | 5 | 2 |
| 19. | Which refrigerant will you select for home air conditioning? Justify it. | 5 | 3 |
| 20. | What are the important properties (at least five) of refrigerant?        | 5 | 2 |

**PART- B (5x 10=50Marks)**

		Marks	CO	RBT LEVEL
21.(a)	Analyze briefly about (A) Geotechnical Engineering. (B)Transportation Engineering.	(10)	1	4
	<b>(OR)</b>			
(b)	Analyze the contribution of Mechanical Engineers to the welfare of society.	(10)	1	4
22.(a)	Compare prismatic compass and surveyor compass with neat sketch.	(10)	2	3
	<b>(OR)</b>			
(b)	Explain the process of cement manufacturing with neat sketch. List the different types of cement.	(10)	2	3
23.(a)	Analyze the construction sequence of column in detail with neat sketch. Highlight the important factors to be followed in each stage.	(10)	3	4
	<b>(OR)</b>			
(b)	Analyze the lintel beam in detail with a neat sketch. Highlight the places where the lintel beam will be constructed.	(10)	3	4
24.(a)	Analyze and compare the working principle of Diesel engine and petrol engine.	(10)	4	4
	<b>(OR)</b>			
(b)	Analyze why Steam Power Plants are predominantly used for power generation. Describe its construction and working principle with a neat sketch.	(10)	4	4
25.(a)	Analyze the type of Refrigeration system used in domestic refrigerators.	(10)	5	4
	<b>(OR)</b>			
(b)	Analyze the type of Air conditioner suitable for your classroom. Discuss its working principle with a neat sketch.	(10)	5	4

**PART- C (1x 10=10Marks)**

(Q.No.26 is compulsory)

		Marks	CO	RBT LEVEL
26.	Which refrigerant will you select for an industrial refrigeration system? Analyze the industrial refrigeration system with a neat sketch.	(10)	5	5

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