Q. Code:845147

Reg. No. | | | | | | | | | | | | | |

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

First Semester

CM18151– BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to BT, CH and EE)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Gain basic knowledge in surveying and common civil engineering materials.	**3**
CO 2	Understand the building foundation, superstructures and bridges and dams.	**3**
CO 3	Gain knowledge of various power plants and their main components	**3**
CO 4	Understand the working principles of two/four stroke internal combustion	**3**
CO 5	Have exposure to domestic refrigerator and air conditioners.	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	What are the two basic principles of survey?	**1**	**2**
2.	What are the instruments used for leveling?	**1**	**2**
3.	Define bearing capacity of soil	**2**	**1**
4.	What are columns? How are columns classified?	**2**	**2**
5.	Classify the types of power plants.	**3**	**2**
6.	Describe the method of site selection for Hydroelectric power plants.	**3**	**2**
7.	What is Hybrid Electric Vehicles?	**4**	**2**
8.	Compare four stroke and two stroke engines.	**4**	**2**
9.	What is the role of psychometry in Air conditioning?	**5**	**2**
10.	List out the important properties of refrigerant?	**5**	**2**

PART- B (5 x 14 = 70 Marks)

			Marks	CO	RBT LEVEL
11. (a)	**(i)**	Which type of area is best suited for chain survey? Give reasons.	**(10)**	**1**	**3**
	(ii)	What are the objectives of plane surveying?	**(4)**	**1**	**3**
		(OR)			
(b)	**(i)**	What are the advantages and disadvantages of compass surveys?	**(7)**	**1**	**3**
	(ii)	What are the qualities of a good brick?	**(7)**	**1**	**3**

12. (a)	Discuss about the following construction materials: bricks, stones, cement, and cement concrete and steel.	**(14)**	**2**	**3**
	(OR)			
(b)	**(i)** Discuss about various types of Building Foundations.	**(7)**	**2**	**3**
	(ii) Differentiate between the Brick Masonry and Stone Masonry.	**(7)**	**2**	**3**
13. (a)	Analyze 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)	Analyze the type of Power Plant you will select in a place where water is flowing in surplus. Describe its construction and working principle with a neat sketch.	**(14)**	**3**	**3**
14. (a)	**(i)** Justify the necessity of lubrication of the IC engines.	**(7)**	**4**	**3**
	(ii) Discuss about the different methods of lubrication.	**(7)**	**4**	**3**
	(OR)			
(b)	Analyze and compare the working principle of Diesel engine and petrol engine.	**(14)**	**4**	**3**
15. (a)	**(i)** Illustrate the Layout of Domestic Refrigerator and discuss its functioning.	**(10)**	**5**	**3**
	(ii) Calculate kW equivalent of 1 ton of refrigeration.	**(4)**	**5**	**3**
	(OR)			
(b)	Draw and analyze the following: a). vapor compression refrigeration system. b). vapor absorption refrigeration system. c). Split Air conditioner. d). Window Air conditioner. e). Domestic Refrigerator.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Discuss about the type of Refrigeration system used in large scale commercial application.	**(10)**	**2**	**4**

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