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December 2023 (ENDSEM) EXAM

TY B. TECH (SEMESTER - I)

COURSE NAME: Energy Conservation & Management Branch: Mechanical COURSE CODE:MEUA31205D

(PATTERN 2020)

Time: [1Hr. 30 Min] **[Max. Marks: 40]**

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data wherever required**
4) **All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4,5 and 6 respectively.**

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Categorize the technical meaning of BEE Labels or star rating?	[2]	1	2
Q2	a) Tag the difference between Solar Cell, Module and Array?	[2]	2	2
Q3.	a) Illustrate Classification of Induction Motors. Draw graph to interpret the variation of Torque, Current and Power of Induction motor with respect to variation in speed.	[6]	3	4
	b) Distinguish the Circuit Watts, Installed Load Efficacy and Room Index. For a room of 9 x 5 m, determine the appropriate number of measuring points for lux levels?	[6]	3	4
Q.4	a) Summarize the wireless Smart Home Technologies? Comment minimum two features of three recent technology.	[5]	4	2
	b) Express three important challenges faced by smart home technologies? Group the three advantages and disadvantages of smart homes?	[5]	4	2
	c) With labeled schematic diagram articulate how to control real home appliances by IOT techniques?	[5]	4	2
Q.5	a) Annotate the concept of Green Building precisely by drawing labeled sketch. Paraphrase the benefits of Green Building?	[5]	5	2
	b) Exemplify five important features of Green Building. Associate any one Passive Cooling Technique in Green Building with schematic diagram.	[5]	5	2
		[5]	5	2

	c) Interpret the Objective of Green Building Rating System? Enlist performance evaluation parameters of Green Building.			
Q.6)	a) Estimate the use of AI for energy management? Predict how it will transform the energy sector?	[5]	6	2
	b) With schematic diagram paraphrase the six ways to increase energy efficiency in data centers.	[5]	6	2
	c) Summarize short note on strategic role of AI for Microgrid.	[5]	6	2

BT Levels: 2-Understand, 3- Apply, 4- Analyze