FACULTY OF ENGINEERING & TECHNOLOGY,
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Cycle Test – II

Learning Assessment (CLA 1)			
Levels	**Level of Thinking**	**Weightage Required (%)**	**Weightage Provided (%)**
1	Remember Understand	15%	14%
2	Apply Analyse	20%	22%
3	Evaluate Create	15%	14%

Academic Year: 2022-2023 (ODD SEM)
Program offered: B. Tech
Year / Sem : III/V
Course Code and Title: 18EEO306T/Energy Conservation
Maximum Marks: 50
Duration: 90 mins

PART A (Answer all the questions) **14*1 MARKS=14 MARKS**

Q. No.	Questions	Reference to CO	Reference to PO	Blooms Taxonomy	Marks Allotted	Answer
1	One ton of refrigeration (TR) is equal to ____. a) 3024 Kcal/h b) 3.51 kW c) 120oo BTU/h d) all			Remember		D
2	The required A/C size for comfort conditions for general living room (12 ft x 12 ft) at residence is_____. a) < 0.5 TR b) 1 to 1.5 TR c) > 2.5 TR d) any of the above			Remember		B
3	Typical range of COP value for a compression refrigeration cycle is: a) 1 to 10 b) 1 to 20 c) 2 to 5 d) 2 to 20			Understand		C
4	Providing information to BEE is the role of energy manager as per a) Energy Conservation Act 2003 b) Energy Conservation Act 2004 c) Energy Conservation Act 2002 d) Energy Conservation Act 2001	CO1	1	Remember	1	D
5	Under Energy Conservation of Act 2001, data on energy consumed & action on recommendations of accredited energy auditor should be reported to a) BEE and state level agency once a year b) BEE and state level agency twice year c) BEE only d) State level designated agency only	CO1	2	Understand	1	A
6	Publishing a formal statement of energy policy that can be used to define company activities in energy matters is the role of ---------- a) top management b) middle management c) energy auditor d) energy manager	CO1	1	Understand	1	A
7	To assess the existing situation of a plant, good energy saving strategy plan starts with… a) energy audit b) training c) seminar d) none of the above			Remember		A
8	Which of the voltage is not available for Indian distribution system?			Remember		C

	a) 33 kV b) 11 kV c) 280 V d) 433 V					
9	The synchronous speed of a motor with 6 poles and operating at 50 Hz frequency is ___. a) 1500 b) 1000 c) 3000 d) 750			Understand		B
10	Which of the following light source has least life? a) Sodium vapor b) Mercury Vapour c) Halogen d) incandescent			Understand		D
11	Presenting the load demand of a consumer against time of the day is known as___. a) Time Curve b) Load curve c) Demand curve d) Energy curve			Understand		B
12	The efficiency figures for energy efficient motors (in comparison with standard efficiency motor) can be generally higher by____%. a) 1% b) 3-7% c) 10% and above d) 8-10%			Understand		B
13	The total amount of harmonics present in the system is expressed using ___. a) Total Harmonic Factor b) Total Harmonic Ratio c) Total Harmonic Distortion d) Crest Factor			Remember		C
14	What is the typical frequency of operation of electronic ballast? a) 50 Hz b) 10 kHz c) 50 kHz d) 30 kHz			Analyse		D

PART B (Answer all questions) **3*12 MARKS= 36 MARKS**

Q. No.	Questions	Reference to CO	Reference to PO	Blooms Taxonomy	Marks Allotted	Marks Scored
15	A) Calculate the following from the data given below: a) kVAr required to improve PF to 0.95 lag b) reduction in kVA demand Data Rating of transformer = 1600 kVA Average loading on the transformer = 1020 kVA Present power factor (old pf) = 0.64 (lag) Demand charges/kVA = Rs 150/kVA Unit cost of Capacitor/kVAR = Rs. 300 Transformer no-load loss/hour = 2.4 kW Transformer Full -load loss/Hour = 18.57 Kw (OR) B) What is harmonics? List any five problems that can arise due to harmonics in a system,Also explain in detail.	CO1	3	Evaluate Analyze	5	
12	A) Briefly explain the methodology of refrigeration plant energy audit? (OR) B) Explain in detail about various Energy Saving Opportunities in Cooling Towers	CO1	1	Remember	5	
13	A) Plant has two travel grade boilers of rated capacity 38 TPH each and pressure 45 kg/cm2. The design steam temperature from the boilers is 420 ± 5 °C. Installed turbo feed water pump to boiler is Q = 135 m3/h, H = 650 m, input	CO1	3	Analyze	5	

	pump power = 292 kW with0.93 efficiency of motor, feed water temperature at pump inlet is 105 °C. What will be the design efficiency of pump? (specific weight of water at 105 °C= 0.95) (OR) B) List the factors to be considered while selecting a motor and explain how it will affect energy consumption.					

CO ASSESSMENT		
Course Outcomes	**Marks Allotted**	**Marks Scored**
CO1	**25**	
CO2	**-**	
CO3	**-**	
CO4	**-**	
CO5	**-**	
Total	**25**	

Total Marks:

Signature of the Faculty