Code No: **P18EET13** R18

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
UTILIZATION OF ELECTRICAL ENERGY
(EEE Branch)

Time: 3 hours Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer **all** the questions in Part-A (**5X2=10M**)

Q.No.		Questions	Marks	CO	KL
1.	a)	What is the use of flywheel of a motor?	[2M]	1	2
	b)	What are the methods of controlling temperature of resistance furnaces?	[2M]	2	1
	c)	State the relation between plane angle and solid angle.	[2M]	3	3
	d)	What are the factors affecting the schedule speed of a train	[2M]	4	2
	e)	How is an energy efficient motor different from standard motor?	[2M]	5	1

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
2.	a)	Explain the factors governing the selection of a motor for a drive.	[5M]	1	2
	b)	Explain the speed -torque characteristics of an induction Motor /Generator.	[5M]	1	2
		OR			
3.	a)	Compare group drive and individual drive.	[5M]	1	2
	b)	Describe the (i) Continuous rating, (ii) intermittent rating and (iii) Short time rating of an electric motor.	[5M]	1	3
		UNIT-II			
4.	a)	.Explain the advantages of electric heating over other types.	[5M]	2	2
	b)	Explain the requirements of heating material	[5M]	2	2
		OR			
5.	a)	Explain the merits and demerits of arc welding.	[5M]	2	2
	b)	Explain the Comparison between AC and DC Welding	[5M]	2	2
		UNIT-III			
6.	a)	State and explain Lambert's cosine law of illumination.	[5M]	3	2
	b)	A surface inclined at an angle of 75 degrees to the rays is kept 4m away from a 125 candle power lamp .Calculate the average intensity of illumination on the surface.	[5M]	3	3
		OR			
7.	a)	Explain the comparison between tungsten filament lamps and fluorescent tubes.	[5M]	3	2
	b)	Explain the different types and design of flood lighting.	[5M]	3	2
		UNIT-IV			
8.	a)	Explain the various systems of electrifications	[5M]	4	2
	b)	Explain the requirements of electric traction System.	[5M]	4	2
		OR			

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9.	a)	Describe the Mechanics of power transfer related to train movement.	[5M]	4	4
	b)	An electric train is to have acceleration and breaking retardation of 1.0 Km/h/s and 3.2 Km/h/s respectively. If the ratio of maximum to average speed is 1.2 and time for stops 28 seconds, find schedule speed for a run of 1.5 km , considering simplified trapezoidal speed-time curve	[5M]	4	3
UNIT-V					
10.		Derive an expression for Specific energy consumption for given run for a trapezoidal speed-time curve.	[10M]	5	3
OR					
11.	a)	Explain the methods to improve the coefficient of adhesion.	[5M]	5	2
	b)	Explain the requirements of modern traction motors.	[5M]	5	2

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