Q.P. Code: 16EE238 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year II Semester Regular Examinations September 2020

Utilization of Electrical Power

(Electrical & Electronics Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	Draw and explain the operation of sodium vapour lamp with neat diagram and enumerate its advantages and disadvantages.	**6M**
	b	The candle power of a lamp placed normal to a working plane is 30cp. Find the distance, if the illumination is 15 lux.	**6M**
		OR	
2	**a**	State and explain laws of illumination.	**6M**
	b	When a 250V lamp takes a current of 0.8 ampere, it produces a total flux of 3,260 lumens. Calculate (i) MSCP (ii) efficiency of lamp.	**6M**

UNIT-II

3	**a**	Describe direct and indirect core type furnace with neat sketches.	**6M**
	b	Explain application of induction heating.	**6M**
		OR	
4	**a**	Discuss briefly about induction and dielectric heating process.	**6M**
	b	A slab of insulating material 150 sq cm in area and 1 cm thick is to be heated by dielectric heating. The power required is 400 W at 30×10^6 cps. A material has permittivity of 5 and power factor of 0.05. Determine voltage necessary.	**6M**

UNIT-III

5		Explain selection of electric drives for particular applications.	**12M**
		OR	
6	**a**	Explain the running characteristics of shunt motor?	**3M**
	b	Explain the different types of drives and load equalization?	**9M**

UNIT-IV

7	**a**	Compare A.C traction with D.C traction with necessary examples.	**6M**
	b	Explain about the different methods of electric braking systems in the case of traction.	**6M**
		OR	
8	**a**	Discuss the about mechanics of train movement	**6M**
	b	Derive the expression for crest speed by using trapezoidal speed time curve.	**6M**

UNIT-V

9	**a**	Explain the calculations of tractive effort.	**6M**
	b	Write a short note on specific energy consumption.	**6M**
		OR	
10	**a**	Write short notes on specific energy consumption.	**6M**
	b	What do you understand by the specific energy consumption and what factors affect the specific energy consumption.	**6M**

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