Paper ID [EE304]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 6th/7th)

ELECTRIC DRIVES & UTILIZATION (EE - 304)

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.
3) Attempt any **Two** questions from Section - C.

Section - A

Q1) *(10 × 2 = 20)*

a) Explain drives. What are its basic types?

b) Describe fly wheel effect.

c) Give layout of a substation and describe it.

d) Mention various methods of electric heating and explain one of them.

e) Compare various welding methods.

f) Define illumination. Mention properties of a good illumination.

g) List and explain light sources.

h) Give a diagram describing a basic refrigeration system.

i) Mention the requirements of refrigeration and air conditioning.

j) Explain various laws of electro lysis.

Section - B

(4 × 5 = 20)

Q2) Find the thickness of copper deposited on a plate of 2.25 cm^2 during electro lysis if a current of one ampere is passed for 150 minutes. Density of copper is 8.9 gm per c.c and electrochemical equivalent of copper is 0.0003295.

Q3) What are different space heating systems? Discuss them.

Q4) A minimum illumination of 8o lumens / m^2 is required in a factory shed of 100 m × 10 m. Calculate the number the location and the wattage of the units to be used. Assume that the depreciation factor is 0.8 coefficient of utilisation is 0.4 and the efficiency of lamp is 14 lumens/watt.

Q5) What are the essential properties of resistance heating elements? How will you design such elements in case of resistance heating.

Q6) Discuss the advantages and disadvantages of the system of traction using 25 kV, 50Hz supply and d.c. series motor.

Section - C

(2 × 10 = 20)

Q7) A motor running continuously on full load has a temperature rise of 20°C. The heating time constant is 60 minutes. How long should the motor be run at twice the continuously rated output with out over heating? The motor has maximum efficiency at full load.

Q8) What are the basic components of d.c and a.c welding sets and explain their working.

Q9) Explain street lighting. Mention its principles and explain in detail describe the working of fluorescent tube. What are the functions of starter and choke in it.

❄❄❄