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B. TECH.

THEORY EXAMINATION (SEM–VIII) 2016-17

UTILIZATION OF ELECTRICAL ENERGY AND TRACTION

Time : 3 Hours *Max. Marks : 100*

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Attempt all parts of the following question: **10 x 2 = 20**

(a) What are the various traction systems do you know?

(b) What is the special advantage of flywheel drive?

(c) What are the various current collection systems?

(d) Write any three advantages of electric heating.

(e) What is arc type heating?

(f) What are the modes of heat transfer?

(g) What is Faraday's second law of electrolysis?

(h) Define refrigeration.

(i) What is Luminous flux?

(j) Define Welding.

SECTION – B

2. Attempt any five parts of the following question: **5 x 10 = 50**

(a) What are the laws of illumination and requirement of good lighting?

(b) Explain any four applications of electrolysis.

(c) Describe any two types of furnace for induction heating.

(d) Describe the complete classification of electric heating.

(e) Explain Air conditioning cycle.

(f) What are the different systems of track electrification? Also discuss its merits and demerits.

(g) Explain the principle of linear induction motor.

(h) What are the advantages and disadvantages of linear induction motor as compared to the rotary induction motor?

SECTION – C

Attempt any two parts of the following questions: **2 x 15 = 30**

3. How direction of rotation of a traction motor is reversed? Explain the working principle of metadyne control of traction motor. Also discuss its merits and demrits.

4. Discuss the domestic type refrigerator in detail. What is the main difference between a refrigerator and water cooler and between water cooler and air conditioner?

5. Explain induction heating. Explain TIG & MIG. Also discuss plasma arc heating