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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 demerits.
- 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