

**B.TECH. SEM -VII ELECTRICAL 2014 COURSE (CBCS) : WINTER  
- 2017**

**SUBJECT: UTILIZATION OF ELECTRICAL ENERGY**

Day: **Friday**  
Date: **19/01/2018**

**W-2017-2292**

Time: **02.30 PM TO 05.30 PM**  
Max. Marks : **60**

**N. B. :**

- 1) All questions are **COMPULSORY**.
- 2) Draw neat and labeled diagram **WHEREVER** necessary.
- 3) Assume suitable data, if required.

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**Q. 1 a)** What are various reasons of heating element failure? (05)  
**b)** Compare Coreless and Ajax Wyatt Furnace (05)

**OR**

**Q.1 a)** Explain Working principle of Eddy current heating and write its advantages. (05)  
**b)** What are the proportion of good heating element? (05)

**Q.2 a)** What is tariff? Discuss and Compare various Tariff used in practice. (05)  
**b)** Explain sinking fund method to determine depreciation cost of the power plant. (05)

**OR**

**Q.2 a)** List and explain the factors that influence the economic choice of equipment. (05)  
**b)** What are the causes of low power factor? Explain the necessity of improving Power Factor. (05)

**Q.3 a)** State and explain Laws of Illumination (05)  
**b)** What factors do you consider while designing the lighting scheme. (05)

**OR**

**Q.3 a)** List methods of Lighting calculations and Explain Lumen or Light flux method. (05)  
**b)** Explain the principle of simple photometer and Explain equality of brightness type photometer head (05)

**Q.4 a)** Write a short note on equipments and accessories for Electroplating. (05)  
**b)** Mention the objectives of electroplating (05)

**OR**

**Q.4 a)** Along with its Power supply requirements enlist the process and application of electrolysis. (10)

**Q.5** Which are the various systems of electric traction? Explain Kando System in brief. (10)

**OR**

**Q.5 a)** Differentiate between diesel electric system and Electric traction system. (05)  
**b)** Explain the benefits of Electric traction system over other traction systems. (05)

**Q.6** Explain in detail regenerative braking system. (10)

**OR**

**Q.6** 2 DC series motor operate at 600volt supply are started by series- parallel transition method. Each motor takes a current of 400Amp during starting time of 30 sec and has total resistance of 0.5 ohm. Calculate: (10)  
1) Energy lost in starting resistance.  
2) Energy lost in two motors.  
3) Motor Output.  
4) Energy input from Line.

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