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

Question Paper Code: 37304

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Seventh Semester

Electrical and Electronics Engineering

01UEE704 - ELECTRIC POWER UTILIZATION AND ENERGY CONSERVATION

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the disadvantages of electric traction?
2. Name the various methods of traction motor control.
3. State Lambert's cosine law.
4. Define coefficient of utilization in flood lighting systems.
5. Mention the four methods for varying current in heating element.
6. Compare DC welding and AC welding.
7. What is meant by solar collector? Mention its types?
8. What is meant by solar energy?
9. What are the features of VAWT?
10. What are the disadvantages of wind power?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) What are the various types of electric braking used in traction? Discuss in detail. (10)

(ii) Explain in detail about the choice of an electric motor. (6)

Or

(b) (i) A suburban train has a maximum speed of 70 kmph. The schedule speed including a station stop of 30 seconds is 45 kmph. If the acceleration is 1.5 kmphps, Find the value of retardation when the average distance between stops is 4 km. (10)

(ii) Discuss the various factors affecting the scheduled speed. (6)

12. (a) (i) Discuss the various methods of lighting calculations. (8)

(ii) Explain the principle of operation of fluorescent tube. (8)

Or

(b) Summarize the design procedure for factory lighting system. (16)

13. (a) Discuss in details about any two types of resistance welding. (16)

Or

(b) (i) Examine the induction heating? what are the characteristics of induction heating? (8)

(ii) What are the types of ARC furnace? Describe the operation of them in detail. (8)

14. (a) Write short notes on different types of solar energy collectors with neat diagrams. (16)

Or

(b) Outline the parabolic trough and Fresnel lens collector with neat sketch. (16)

15. (a) Compute the expression for forces on the blades and thrust on turbines. (16)

Or

(b) (i) Discuss the various types of wind turbine with neat sketch. (8)

(ii) Explain how to select the site for the wind energy systems. (8)