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Question Paper Code: 37304

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. List any four advantages of electric drives.
2. Identify the three methods of starting DC traction motor?
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. List the different types of electric welding.
7. What is meant by solar collector? Mention its types?
8. Define solar constant.
9. What are the features of VAWT?
10. Classify three types of wind energy conversion system according to size?

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the main parts of a speed time curve. Also explain the curve for different services. (16)

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 kmphs, 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) Exemplify the construction and working of fluorescent lamps. (16)
- 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) Classify the four types of arc welding and also explain the principle and characteristics of a carbon arc. (16)
14. (a) Write short notes on different types of solar energy collectors with neat diagrams. (16)
- Or
- (b) (i) Derive the equation for useful energy gain for flat plate solar collector. (8)
- (ii) Explain with neat sketch, solar radiation geometry. (8)
15. (a) Compute the expression for forces on the blades and thrust on turbines. (16)
- Or
- (b) Explain in detail about wind energy conversation system. (16)