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Question Paper Code : 23514

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Eighth Semester

Electrical and Electronics Engineering

EE 2451 — ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

(Regulations 2008)

(Common to PTEE 2451 – Electric Energy Generation, Utilization and Conservation for B.E. (Part-Time) Seventh Semester – EEE – Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Distinguish between aerobic and anaerobic fermentation.
2. Define distributed generation.
3. Define two part tariff.
4. Mention the role of energy audit.
5. State luminous flux.
6. List down the drawbacks of discharge lamps.
7. Mention the properties of good heating material.
8. What are the drawbacks of core type furnace?
9. State the requirements of ideal traction system.
10. List down the different types of electrical braking.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss in detail about the construction and working of nuclear power plant. (16)

Or

- (b) Explain in detail about the operation of two different fuel cells. (16)
12. (a) Elaborate briefly on different types of tariff with example. (16)

Or

- (b) (i) Write a brief note on economics of power factor improvement. (8)
- (ii) Discuss any four power quality problems with causes and consequences. (8)
13. (a) Explain in detail about the gaseous discharge lamp with a neat sketch. (16)

Or

- (b) Two street lamps are 20 m apart and are fitted with a 500 C.P. lamp at a height of 8 m above the ground each. Calculate the illumination at a point under each lamp and midway between the lamps. (16)
14. (a) Elaborate the operation of resistance heating and dielectric heating. (16)

Or

- (b) Describe briefly on electric welding and its types. (16)
15. (a) With a neat block diagram explain in detail about the electric drive and its classifications with advantages and disadvantages. (16)

Or

- (b) Describe the mechanism of train movement with speed-time curve. (16)