

G 1114

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

Seventh Semester

Branch : Electrical and Electronics Engineering

UTILIZATION OF ELECTRICAL POWER

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Explain the mechanical characteristic of DC and AC motors.
2. Distinguish between Dynamic and Regenerative braking.
3. Explain trapezoidal speed time curve of electric traction.
4. Explain parallel control of DC series motor.
5. Explain types of high frequency heating.
6. Distinguish between Resistance welding and Arc welding.
7. Explain the requirements of good lighting.
8. Discuss the different types of refrigeration systems.
9. Briefly explain the necessity for energy management.
10. Write short note on Energy Auditing.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. Explain Electrical Breaking and Plugging.

Or

12. Explain the mechanical characteristics of motors used in a Textile mill and also design the size grating of the motor used.

Turn over

13. Explain the mechanisms of train movement and tractive effort for propulsion of train.

Or

14. An electric train has uniform acceleration from rest at 3 kmphps for 30 seconds, coasting for 60 seconds, braking period of 30 seconds. The train is moving a uniform down gradient of 2 % tractive resistance 40 N/tonne, rotational inertia effort 10% of dead weight, duration of stops 15 seconds and overall efficiency of transmission gear and motor of 80 %. Calculate the schedule speed and specific energy consumption of run.

15. Describe with neat sketches, the construction, working and limitations of different types of arc furnaces.

Or

16. Explain different types of welding and heating.

17. Distinguish between interior and exterior lighting system of factory lighting.

Or

18. Write short notes on :

(a) Refrigerant.

(b) No frost refrigeration.

(c) Trouble shooting.

19. Discuss the importance of energy management and the techniques applied for energy conservation.

Or

20. Discuss in detail the energy auditing in a textile mill and the various techniques used for energy saving.

(5 × 12 = 60 marks)