300810(24)

APR-MAY

B. E. (Eight Semester) Examination, 2020

(New Scheme)

(AEI, Bio Tech, Chem., Civil, CSE, Elect., EEE, EI, ET&T, IT, Mech., Mining, Metallurgy, Mechatronics, Prod., Automobile Branch)

ENERGY AUDITING and MANAGEMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : Attempt all questions. Part (a) from each question is compulsory. Attempt any **two** parts from (b), (c) and (d).*

Unit-I

1. (a) What is Energy Management?   2

    (b) Enlist different techniques used in energy conser-
    vation in realistc distribution system.   7

(c) What are different methods of load forecasting? Classify those methods.　7

(d) Discuss development and significance of renewable energy sources with their limitations.　7

Unit-II

2. (a) What is firewood crisis?　2

(b) Describe comparative potential of solar, wind and ocean energy sources. What is prospects of those in India?　7

(c) What are Super Conductors? How they can be used in power system? Explain.　7

(d) Draw the schematic diagram of wind driven induction generator and write working principle.　7

Unit-III

3. (a) What is aim of energy auditing in any industry?　2

(b) What are significance of preventive maintenance in any industry? How it supports energy auditing?　7

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(c) What factors are considered to decide electricity tariffs? Describe two part tariff. 7

(d) A 3 phase 5 kW induction motor has a power factor of 0·75 lagging. A bank of capacitor is connected in delta across the supply terminals and power factor is raised to 0·9 lagging. Determine the kVAR rating of bank. 7

Unit-IV

4. (a) Define fine tuning. 2

(b) How productivity of an industry can be increased by proper capacity utilisation? Explain. 2

(c) Discuss the impact of technological upgradation on industry. How breakeven analysis is done? 2

(d) What are different methods of energy conservation? Enlist different meters used in energy auditing. 7

Unit-V

5. (a) What is Load Management? 2

(b) Describe load priority technique. How it is implemented? 7

(c) Explain Peak clipping, Peak shifting and Valley filling in DSM. Draw neat diagrams. 7

(d) "Socio economic awareness programme can improve the implementation of strategic conservation." Justify and explain. 7