

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (Computer Science Engg./Electronics & Communication
Engg./Mechanical Engg.) (Sem.-7/8)**

ENERGY MANAGEMENT

Subject Code : OEEE-103-18

M.Code : 90540

Date of Examination : 16-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. Write briefly :

- a) What are the objectives of a tariff?
- b) How cogeneration is different from conventional generation?
- c) What are the requirements of energy efficient motors?
- d) What are the advantages of captive power generation?
- e) How pressure is measured in the process of energy audit?
- f) Define commercial and non-commercial sources of energy. Give two examples of each.
- g) Why renewable sources of energy are gaining momentum in the field of power generation?
- h) What is demand side management?
- i) Why moderate to high power factor is necessary? How it is improved?
- j) Draw energy flow diagram.

SECTION-B

2. What is computer aided management system? Write a note on energy input, equipment and processes in the various stages of energy audit.
3. Why forecasting is important in energy availability studies? Discuss the various forecasting methodologies.
4. What are the basic principles of energy conservation? How energy conservation can be implemented in the generation, transmission and distribution of an electric power?
5. A single phase motor connected to 230 V, 50 Hz supply takes 10 A at a power factor of 0.7 lagging. Calculate the capacitance required in parallel with the motor to raise the power factor 0.9 lagging. Draw the phasor diagram also.
6. How costs are allocated to a cogeneration facility for the cases when
 - a) Electricity is main product and
 - b) When process steam is main product. Support your answer with the help of a diagram also.

SECTION-C

7. What is captive power generation? Are there any central rules to establish captive power plant? What are the requirements of a captive power plant? What are financing options to establish a captive power plant?
8. Write a note on :
 - a) Aim and strategy of energy audit.
 - b) Energy economic analysis during the process of energy audit.
9. Write a note on :
 - a) Utilization and demand projections of energy sources from Indian point of view and
 - b) Overall structure of EPS.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.