M.Tech. (Process and Food Engineering) (Sem.–1)
ENERGY MANAGEMENT
Subject Code : MTPFE-513-22
M.Code : 93262
Date of Examination : 25-01-23

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1.Attempt any FIVE questions out of EIGHT questions.
2.Each question carries TWELVE marks.

1. What are the comparative factors need to be looked in to for external benchmarking used for energy conservation in food processing industries?

2. Enumerate advantages and disadvantages of renewable energy sources. Also discuss availability of these resources with special reference to Indian context.

3. Enumerate and discuss various factors required for selecting site of small hydroelectric power plants.

4. Discuss Anderson cycle steam for Ocean Thermal Energy Conversion (OTEC) with the help of suitable diagram.

5. Why energy conservation is important in the prevailing energy scenario? Differentiate between energy conservation and energy efficiency.

6. What are the few important technical feasibility parameters that one should consider during analysis of energy conservation in agro-processing industries?

7. How does it help one for the determination of the relationship of energy use to key performance indicators in the plant?

8. What is the difference between EWMA and CUSUM? Use CUSUM technique and calculate energy savings for 6 months period of 2020. For calculating total energy savings, average production can be taken as 4000MT/Month. Refer data given in table below:

2020 - Month	Actual-SEC, kWh/MT	Predicted SEC kWh/MT
Jan	242	265
Feb	238	265
Mar	287	265
Apr	237	265
May	295	265
June	246	265

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