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Total No. of Pages : 02

Total No. of Questions : 16

B.Tech. (Ind. Engg. (Spl. in TQM)) (Sem.-7)

**ENERGY MANAGEMENT**

Subject Code : IEM-755

M.Code : 71702

Time : 3 Hrs.

Max. Marks : 40

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt All EIGHT Questions from SECTION-A carrying TWO marks each.
2. Attempt any SIX questions out of EIGHT from SECTION-B carrying FOUR marks each.

**SECTION-A**

Answer briefly :

1. Differentiate between Renewable energy and non-Renewable energy. Which energy source is called Green Energy or Sustainable Energy and why?
2. Enumerate the advantages and disadvantages of concentrating collectors over flat- plate types of solar collectors.
3. Mention the application of fuel cells and explain anyone application.
4. Explain the duties and responsibilities of energy manager in an industry.
5. Differentiate between all air and all water HVAC systems.
6. What is Illumination System? What are the different types of lighting systems used in industry?
7. Describe the electrical energy conservation areas in boilers.
8. Write short note on 'Economics of Energy Efficiency'.



### SECTION-B

9. Explain the characteristic features of various types of renewable and non-renewable energy sources giving their advantages and applications.
10. Explain the working principle of photovoltaic system for power generation. Also enumerate the advantages and disadvantages of photovoltaic solar energy conversion.
11. Draw a schematic diagram of a typical biomass gasification system and explain its working principle and advantages.
12. Define Energy Management. Discuss the energy management opportunities in distribution of energy.
13. Describe the energy management opportunities in HVAC systems.
14. What is electrical load analysis? How do you calculate electrical load?
15. Describe the waste heat recovery systems used in heat exchangers. What are the direct and indirect benefits of waste heat recovery?
16. Define Energy Audit. Enumerate the major steps involved in Electrical Energy Audit.

**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.**