**Q. Code:969338**

**Reg. No.** | | | | | | | | | | | | | |

# B. E / B. TECH.DEGREE EXAMINATIONS, MAY 2024

Sixth Semester

## OE18310 – ENERGY MANAGEMENT

*(Common to all branches except Chemical Engineering)*

**(Regulation 2018 / 2018A)**

**TIME:3 HOURS** **MAX. MARKS: 100**

**CO1** Interpret the sources of energy and its availability at global level.

**CO2** Evaluate the energy conversion technology and their impact on environment.

**CO3** Identify alternative energy resources and its conversion technology.

**CO4** Acquire knowledge on energy conservation and management techniques.

**CO5** Determine the components involved in energy auditing.

### PART- A(10x2=20Marks)

(Answer all Questions)

| | | CO | RBT LEVEL |
|---|---|---|---|
| **1** | Differentiate primary and secondary energy. | **1** | **2** |
| **2** | Write about uncertainties related to nuclear energy. | **1** | **2** |
| **3** | Relate the energy and environment. | **2** | **3** |
| **4** | List the energy storage techniques. | **2** | **1** |
| **5** | Indicate the advantages and limitations of tidal power sources. | **3** | **2** |
| **6** | Explain power coefficient of wind power. | **3** | **2** |
| **7** | Identify the factors that have an effect on energy growth. | **4** | **2** |
| **8** | Name any four optimization techniques used in energy conservation. | **4** | **2** |
| **9** | Give factors to be considered for choosing the type of energy audit. | **5** | **2** |
| **10** | Indicate the instruments used in energy audit. | **5** | **1** |

### PART- B (5x 14=70Marks)

| | | Marks | CO | RBT LEVEL |
|---|---|---|---|---|
| **11. (a)** | With a neat diagram explain the production of Nuclear energy and | **(14)** | **1** | **4** |

discuss its advantages and disadvantages.

**(OR)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | Sketch the supply demand curve for energy. Explain briefly the strategies required to overcome the shortage of energy. | **(14)** | **1** | **4** |

| | | | | | |
|---|---|---|---|---|---|
| **12. (a)** | Explain the hydrological cycle with the help of a neat diagram and highlight its significance in other biogeochemical cycles. | **(14)** | **2** | **4** |

**(OR)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | Analyze the various methods of energy storage and elaborate chemical and electrochemical methods. | **(14)** | **2** | **4** |

| | | | | | |
|---|---|---|---|---|---|
| **13. (a)** | Describe with a neat sketch the working of a wind energy conservation system (WECS) including the main components. | **(14)** | **3** | **3** |

**(OR)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | With a neat diagram explain the production of geothermal energy and discuss its advantages and disadvantages. | **(14)** | **3** | **3** |

| | | | | | |
|---|---|---|---|---|---|
| **14. (a)** | Discuss the energy conservation opportunities available in Chlor- Alkali Industry. | **(14)** | **4** | **3** |

**(OR)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | Enumerate various energy conservation measures that can be adopted in pulp and paper industries. | **(14)** | **4** | **3** |

| | | | | | |
|---|---|---|---|---|---|
| **15. (a)** | Discuss in detail the ten steps methodology for detailed energy audit. | **(14)** | **5** | **3** |

**(OR)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | Establish the necessity for Benchmarking and the benefits of the same. | **(14)** | **5** | **3** |

## PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

| | | Marks | CO | RBT LEVEL |
|---|---|---|---|---|
| **16.** | Evaluate the various alternative energy sources as a future source of energy. | **(10)** | **3** | **5** |

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