

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary End Semester Examination – Summer 2022

Course: B. Tech.

Branch : Electrical Engineering

Semester :VII

Subject Code & Name: BTEEE705B Energy Audit and Conservation

Max Marks: 60

Date: 27/08/2022

Duration: 3.45 Hrs.

Instructions to the Students:

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q. 1 Solve Any Two of the following.

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|-------------------------------------------------------------------------------|---------------|---|
| A) State types of classification of energy sources with one example for each. | Understanding | 6 |
| B) What is Clean development mechanism? | Understanding | 6 |
| C) Write a short note on Kyoto Protocol. | Understanding | 6 |

Q.2 Solve Any Two of the following.

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|-----------------------------------------------------------------------------------------------|-------------|---|
| A) Define the energy audit as per the energy conservation Act 2001 and Need for energy audit? | Remembering | 6 |
| B) Explain detailed energy audit with its 10 steps. | Remembering | 6 |
| C) Explain responsibilities and duties of energy manager under EC act-2001. | Remembering | 6 |

Q. 3 Solve Any Two of the following.

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|-----------------------------------------------------------------------------------|---------------|---|
| A) Explain energy conservation techniques in pumping system. | Remembering | 6 |
| B) Explain energy conservation techniques in fans and blowers. | Remembering | 6 |
| C) What is cogeneration? Explain topping and bottoming cycles with block diagram. | Understanding | 6 |

Q.4 Solve Any Two of the following.

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|--------------------------------------------------------------------------------------------------------------------|---------------|---|
| A) Explain energy conservation potential in electric motor. What are the advantages of energy efficient motors? | Understanding | 6 |
| B) Explain energy conservation techniques in transmission and distribution (T and D) sector of utility industries. | Understanding | 6 |
| C) Explain various energy efficient opportunities in boiler. | Understanding | 6 |

Q. 5 Solve Any Two of the following.

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| A) Explain simple payback period. | Understanding | 6 |
| B) Write a note on: i) Return on Investment (ROI) ii) Time Value of Money | Understanding | 6 |
| C) What is NPV of a project, (life 2 years) which requires an investment of Rs. 50000 and yield Rs. 30000 in the 1st year and Rs. 40000 /- in the next year, if the interest rate is 10%. | Understanding | 6 |

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