CETM-2025

ASSIGNMENT BOOKLET

CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

Last date for submission:

15th May, 2025
30th September, 2025

School of Engineering and Technology
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110 068

Dear Student,

We advise you to go through your programme guide carefully and read the section pertaining to assignments. A weightage of 30 percent, as you are aware, has been earmarked for continuous evaluation which would consist of **one tutor-marked assignment** for each of OEY 001, OEY 002 and OEY 003 of this course. You have to score a minimum of 40 marks out of 100 marks in each of the assignments. **Submit your assignment response at your Study Centre.**

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully.

1) On top of the first page of your TMA answer sheet, please write the details exactly in the following format:

ENROLMENT NO: ……

NAME: ……

ADDRESS: ……

……

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COURSE CODE: …….

COURSE TITLE: …….

ASSIGNMENT NO.: ……..…

STUDY CENTRE: ……..….. **DATE:** …….……...

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.

3) Leave 4 cm margin on the left, top and bottom of your answer sheet.

4) Your answers should be precise.

5) While solving problems, clearly indicate the question number along with the part being solved. Be precise. Recheck your work before submitting it.

6) The assignment should be in your own handwriting. Typed assignments will not be accepted.

Answer sheets received after the due date shall not be accepted.

We strongly feel that you should retain a copy of your assignment response to avoid any unforeseen situation and append, if possible, a photocopy of this booklet with your response.

We wish you good luck.

Assignment-3

(To be done **after** studying the course material)

Course Code: OEY 003
Assignment Code: OEY-03/TMA/2025
Maximum Marks: 100

Note:

1. In any question, whenever we ask you to suggest an activity we expect you to give one other than those covered in the units.
2. For any question worth 5 marks the word limit is 200 words, for a 10 mark question it is 350 words, and for a 15 mark question it is 500 words.
3. All questions are compulsory.

Q.1 Describe the energy conservation opportunities for residential and commercial application. 10

Q.2 (a) Energy conservation and energy efficiency are separate but related concepts. Discuss the statement.

(b) How do an Industry, nation and globe would benefit from energy efficiency programmes? 5+5= 10

Q.3 (a) Explain the utility and features of the energy audit equipment used for the measurement of electrical parameters. 05

(b) Explain the working principle of thermocouples. 05

Q.4 A co-generation plant installation is expected to reduce a company's annual energy bill by Rs.24 lakhs. If the capital cost of the new cogeneration installation is Rs.90 lakhs and the annual maintenance and operating costs are Rs. 6 lakhs, what will be the expected payback period for the project? 10

Q.5 Classify the energy conservation measures applicable in steel industry. 10

Q.6 (a) Define real power, apparent power and power factor.

(b) A company has power factor of 0.6. Determine the power capacitor rating for improving the power factor to 0.95. 5+5=10

Q.7 (a) Which are typical applications of waste heat boilers?

(b) How do they differ from ordinary steam boilers? 5+5= 10

Q.8 The operating power factor during audit is 0.7. Total load connected is 180 kW. Determine the rating of power capacitors for improving the power factor to 0.9. 10

Q.9 Write short notes on any four of the following: 20

a) Sankey Diagram
b) Waste heat recovery
c) Combustion analyser
d) Rural energy planning
e) Renewable energy systems