
CETM- 2021

ASSIGNMENT BOOKLET

**CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT
(CETM)**

Last date for submission:

**30th April for January session
30th September for July session**

**School of Engineering and Technology
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068**

Dear Student,

We advise you to go through your programme guide carefully and read the section pertaining to assignments. A weightage of 30 per cent, 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.**

A feedback form is enclosed with this assignment. Please complete it after solving this assignment and send it to the Course Coordinator (CETM) on the address specified on the feedback form.

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:

.....

.....

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.

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 -1
(To be done **after** studying the course material)

Course Code: OEY 001
Assignment Code: OEY-001/TMA/2021
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. All questions carry equal marks.
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- Q.1 Describe in detail, the scope of fossil fuel as an energy source along with its advantages and disadvantages.
- Q.2 Discuss the advantages and disadvantages of renewable energy.
- Q.3 Describe in detail the various classifications of biomass.
- Q.4 Define charcoal and discuss its prominent properties.
- Q.5 Discuss, in detail the various active and passive applications of solar energy.
- Q.6 Explain, in detail the operation and maintenance of a biogas plant.
- Q.7 Explain the principle and operation of a fuel cell.
- Q.8 Name some bio fuels and explain the 1st and 2nd generation bio-fuels.
- Q.9 Discuss, in detail the characteristics of lignite and bituminous coal.
- Q.10 Write short notes on the following:
 - a) Wind energy
 - b) Tidal energy

Assignment - 2
(To be done **after** studying the course material)

Course Code: OEY 002
Assignment Code: OEY-002/TMA/2021
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. The marks of each question are indicated against it.

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- | | | | |
|-----|----|---|----|
| Q.1 | a) | What is Solar Constant? Also write the advantages of selective surface. | 10 |
| | b) | Explain the construction and working of Box type solar cooker. Write its advantages over conventional type cooker. | 10 |
| Q.2 | a) | Explain construction and working of Solar Lantern. | 10 |
| | b) | Draw and explain I-V characteristics of a solar cell. | 10 |
| Q.3 | a) | Explain solar air heater with neat schematic diagram. also, write its advantages. | 10 |
| | b) | Explain floating drum biogas digester with neat diagram. Also write its advantages and disadvantage. | 10 |
| Q.4 | a) | Explain the Trombe wall in detail. Also explain effect of window orientation. | 10 |
| | b) | Classified the different categories of solar building system and also explain main features of three main type of building. | 10 |
| Q.5 | a) | Explain Solar Drying System with neat schematic diagram. Also write its usefulness. | 10 |
| | b) | Write short notes on following: | 10 |
| | | (i). Solar active and solar passive buildings | |
| | | (ii). Green House Effect | |

Assignment - 3
(To be done **after** studying the course material)

Course Code: OEY 003
Assignment Code: OEY-003/TMA/2021
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. The marks of each question are indicated against it.

Q.1	Explain the methods of Energy Audit with suitable examples.	10
Q.2	a) Explain the utility and features of the energy audit equipment used for the measurement of electrical parameters.	5
	b) Explain the working principle of thermocouples.	5
Q.3	Discuss the energy conservation measures that could be important in agricultural sector.	10
Q.4	Classify the energy conservation measures applicable in steel industry.	10
Q.5	What is inflation rate ? Show the effect of inflation on the cost analysis of solar PV system for 1 MW power generation .	10
Q.6	For the climatic condition of Mumbai, to conserve energy which is more effective option a Desert cooler or an AC. Justify your answer.	10
Q.7	How the energy could be conserved by adopting good housekeeping measures?	10
Q.8	Write short notes on the following:	(6 X 5)
	a) CFL	
	b) Present worth method	
	c) Optimal mix of renewable energy system	
	d) Integrated rural energy planning	
	e) Combustion analyzer	
	f) Sankey Diagram	