

CETM- 2019

ASSIGNMENTBOOKLET

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

Last date for submission:

30th March for January session

30th September for July session



**School of Engineering and Technology
Indira Gandhi National Open University
MaidanGarhi, 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/2019
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.

All questions carry equal marks

- Q.1. Describe in detail, the scope of oil and natural gas as an energy source.
- Q.2. Describe in detail the various process parameters that effect biomass production.
- Q.3. Describe in detail, any three conventional energy resources.
- Q.4. Discuss, in detail the various active and passive applications of solar energy.
- Q.5. Explain, in detail the operation and maintenance of a biogas plant
- Q.6. Explain the principle and operation of a hydrogen fuel cell.
- Q.7. Name some bio-fuels and explain the 1st and 2nd generation bio-fuels.
- Q.8. Discuss, in detail the characteristics of lignite and bituminous coal.
- Q.9. What is greenhouse effect ? Explain the major contributors which cause this effect.
- Q.10. Write short notes on the following:
 - a) Wind energy
 - b) Nuclear energy

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

Course Code: OEY 002

Assignment Code: OEY-002/TMA/2019

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. 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 solar air heater. | 10 |
| Q.2 | (a) | What is solar photovoltaic (SPV) and also write its advantages and application. | 10 |
| | (b) | Draw and explain current –voltage characteristics of a solar cell. | 10 |
| Q.3 | | Name the different type of Biogas plant and explain Janta Fixed Dome Biogas plant. | 20 |
| Q.4. | (a) | Explain the difference between direct gain and indirect gain with suitable example. | 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) | Compare the various techniques used in drying. | 10 |
| | (b) | Explain the difference between solar active and solar passive buildings. | 10 |

Assignment-3

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

Course Code: OEY 003
Assignment Code: OEY-03/TMA/2019
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. The marks of each question are indicated against it.
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Attempt all Questions

1. Explain Energy audit and management in detail. 10
2. (a) Explain the utility of any one device that you have used to measure pressure or flow. 5
(b) Explain the working principle of thermocouple and thermometer. 5
3. Discuss the energy efficient devices that could be used in home. 10
4. Classify the energy conservation measures applicable in any industry you have visited recently. 10
5. Compare the cost analysis of wind mill and a solar PV system for 1 MW power generation. Write their advantages and limitations also. 10
6. What is future worth factor? How inflation will effect the future worth factor? Explain with an example. 10
7. How the energy could be conserved in Transportation sector? 10
8. Write short notes on the following: 6× 5= 30
 - (a) Integrated rural energy planning
 - (b) Life cycle cost
 - (c) Renewable Energy
 - (d) Primary energy audit of home
 - (e) Heat recovery from flue gases
 - (f) Insulation of steam pipelines