

Dear Student,

Please read the information on assignments in the Programme Guide that we have sent you after your enrolment. A weightage of 30%, as you are aware, has been earmarked for continuous evaluation, **which would consist of one tutor-marked assignment** for this course. The assignment for MST-002 has been given in this booklet.

Instructions for Formatting Your Assignments

Before attempting the assignment, please read the following instructions carefully:

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

ENROLLMENT NO:.....	
NAME :	
ADDRESS:.....	
.....	
.....	
PROGRAMME CODE:	
COURSE CODE:.....	
COURSE TITLE:	
STUDY CENTRE:.....	DATE:.....

PLEASE FOLLOW THE ABOVE FORM AT 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) This assignment is to be submitted at the Study Centre.

We strongly suggest that you should retain a copy of your answer sheets.

- 6) This assignment is valid up to December 31, 2026.
- 7) **You cannot fill the Exam Form for this course** till you have submitted this assignment. So solve it and **submit it to your Study Centre at the earliest**. If you wish to appear in the **TEE, June 2026**, you should submit your TMAs by **March 31, 2026**. Similarly, if you wish to appear in the **TEE, December 2026**, you should submit your TMAs by **September 30, 2026**.

We wish you good luck.

Assignment -1

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

Course Code: BEY013

Course Title: Energy Conversion and Energy Storage

Assignment Code: BEY013/TMA/2026

Maximum Marks: 100

Last Date of Submission: 31st October 2026 for December 2026 Session

And 30th April for June 2027 Session

Note: Attempt all questions. All questions carry equal marks.

Q.1	a) What is Electro Conversion System? Explain Briefly? b) Describe the hysteresis in a magnetic material with suitable sketch.	5+5
Q.2	a) What is the function of a commutator in a DC Generator? Explain briefly. b) What is BACK EMF? Describe its significance.	5+5
Q.3	a) Explain why electrical energy must be converted into mechanical energy for large scale storage? b) Explain role of Power electronics in interfacing electromagnetic storage with AC Power grid.	5+5
Q.4	a) Explain the principle, construction and working of MHD (Magnetohydrodynamic) power plant with a neat schematic diagram. b) Define cogeneration? Explain different types of cogeneration system with examples.	5+5
Q.5	a) Define energy storage. What are the different types of energy storage. Explain briefly. b) Explain the working of solar energy storage system with neat sketch.	5+5
Q.6	a) Discuss the classification of fuels according to various parameters. b) Brief the significances of major properties used to characterize gases and liquid fuels.	5+5
Q.7	a) Discuss the methodology used to determine calorific value of fuel theoretically. b) What is meant by biomass conversion process? List out the various factors which influence the selection of biomass conversion process.	5+5
Q.8	a) Define battery. How the batteries can be classified? List out the few applications of batteries. b) Explain the process of Steam Methane Reforming (SMR).	5+5
Q.9	a) Explain the working principle of fuel cell with neat sketch? b) What is specific capacitance and what are the factors affecting specific capacitance.	5+5
Q.10	Write Short notes on the following:	10

	a) Super Capacitor b) Magnetic Circuit c) Leakage Factor d) Pumped Hydro Energy Storage system	
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