

Assignment Booklet

BSCAEY Programme

B.Sc (Applied Sciences - Energy)

Fourth Semester		
1.	BEY – 007	Power Generation, Transmission and Distribution
2.	BEY – 009	Wind Energy
3.	BEY – 011	Energy and Buildings
4.	MSTE-001	Industrial Statistics – I
5.	BEYE – 025	Stories from Indian Epics, Puranas and Siddhanta(s) (Any one from Sr. No. 5)
	BEYE – 026	Hindi ka Rashtriya evam Sanskritik Kavya (Any one from Sr. No. 5)
	CBKG – 002	कालगणना की विधियाँ (Any one from Sr. No. 5)
	BSKAE – 181	भारतीय ज्ञान परम्परा (Any one from Sr. No. 5)



**SCHOOL OF ENGINEERING & TECHNOLOGY
INDIRA GANDHI NATIONAL OPEN UNIVERSITY**

Maidan Garhi, New Delhi – 110 068

JANUARY 2026

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 Programme. The assignment for BSCAEY (Fourth semester) 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 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) **These assignments submitted should be hand written in your own hand writing.**

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

- 6) **You cannot fill the Exam Form without** submission of the assignments. So solve it and **submit it at the earliest**. If you wish to appear in the TEE, **June 2026**, you should submit your TMAs by **April 30, 2026**. Similarly, if you wish to appear in the TEE, **December 2026**, you should submit your TMAs by **September 30, 2026**.
- 7) Assignments will be submitted at **your respective regional centre**.

We wish you good luck!

Assignment -2

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

Course Code: BEY-009

Course Title: Wind Energy

Assignment Code: BEY-009/TMA/2026

Maximum Marks: 100

Last Date of Submission: May 31, 2026 (For June TEE), September 30, 2026 (For December TEE)

Note:

1. All questions are compulsory.

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| Q.1 | How do atmospheric forces such as the pressure gradient, Coriolis effect, and friction collectively determine global and local wind patterns? | 10 |
| Q.2 | Explain the significance of the Betz Limit in determining the theoretical maximum efficiency of wind turbines and how it influences wind energy system design. | 10 |
| Q.3 | Discuss the role of atmospheric boundary layer and stability in determining the suitability of a site for wind energy generation. | 10 |
| Q.4 | Explain how lift and drag forces are generated on a wind turbine blade and how blade geometry affects overall aerodynamic performance. | 10 |
| Q.5 | Discuss how tip speed ratio (TSR) and rotor solidity influence the performance and stability of wind energy conversion systems. | 10 |
| Q.6 | Discuss the trade-offs between maximizing energy output and minimizing environmental or social impacts during wind farm design. | 10 |
| Q.7 | Discuss how SCADA and real-time monitoring systems improve operational efficiency and reliability in modern wind farms. | 10 |
| Q.8 | Examine the techno-economic and environmental factors that determine the feasibility of a wind farm project. | 10 |
| Q.9 | Discuss the global trends in wind energy deployment and how cost reduction has played a role in this growth. | 10 |
| Q.10 | a) Why are lightning protection systems important in wind turbines? | 05 |
| | b) What are the roles of industry guidelines and government regulations in wind safety | 05 |