



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

InSem Examination-I Winter2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:I
Class:PG-I	Program:M.Tech
Branch Code:ELE	Pattern:2024
Name of Course:Renewable Energy System	Course Code:2406504 (A)
Max. Marks:30	Duration:1.15 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains \_\_01\_\_ page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Marks CO**

**Question No. 1**

- 1 a) Explain the I-V and P-V characteristics of a solar photovoltaic cell with neat diagrams. (7) CO1

**Question No. 2**

- 2 a) Explain the role of DC-DC converters and inverters in a solar PV system. (8) CO2

**OR**

- 2 b) Explain the need for MPPT in solar PV systems with suitable example. (8) CO2

**Question No. 3**

- 3 a) How energy from wind can be extracted? Explain the process by using a suitable diagram. (7) CO1

**Question No. 4**

- 4 a) Explain the origin and characteristics of wind energy and its importance in the renewable energy sector. (8) CO1

**OR**

- 4 b) Discuss the advantages and limitations of wind energy systems compared to conventional power generation. (8) CO1

..... End of question paper.....