

Seat No. **MAR_APR 2025 SUMMER EXAMINATION****11731 Bachelor of Technology (NEP-2.0)****Sub. Name: Energy & Power Engineering****Sub. Code: 68509/84844/84951****Day and Date: MAY ,19-05-2025****Total Marks: 70****Time: 10:30 AM To 01:00 PM**

- Instructions:**
1. All questions are compulsory
 2. Assume suitable data wherever necessary and mention it boldly
 3. Figures to the right indicate full marks
 4. Use of Scientific calculator is allowed

- Q1)** Solve Any two **[12]**
- a) Compare cylindrical parabolic and concentrating paraboloid solar collector on the basis of
- i) Temperature
 - ii) Concentration ratio
 - iii) Suitability
 - iv) Expected life
 - v) Cost
 - vi) Construction
- b) Outline the need of thermal energy storage and list the types.
- c) State and explain solar thermal application.
- Q2)** 2 .Solve Any two **[12]**
- a) With the help of block diagram explain the operation of standalone solar power generation system with battery and AC load.
- b)Give detail classification of fuel cells and its application.
- c) Differentiate on-grid and off-grid solar PV system.
- Q3)** a) Define (Any Three) **[11]**
- i. Cut in Speed.
 - ii. Rated Speed.
 - iii. Betz Limit.
 - iv. Cut out speed/ furling speed.
- b) Explain working of OTEC with neat sketch.
- Q4)** Solve Any two **[12]**
- a) Explain the nuclear power plant with neat sketch.

- b) Explain in detail factors considered for the selection of site for hydroelectric power plant.
- c) Explain the Thermal power plant with neat sketch.

Q5) Solve any two

[12]

- a) A residential load of a locality is given below

Time (hours)	0-5	5-6	6-9	9-18	18-21	21-24
Load (kw)	2	6	20	0	12	8

Draw the load curve, find out load factor and energy consumed during 24 hours.

- b) Describe with neat sketch measurement of smoke and dust in flue gases.
- c) Explain various tariff methods.

Q6) a) Enlist private companies in power sector explain any one.

[11]

- b) Explain the process of energy audit in a commercial establishment.

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (101) Bachelor of Engineering (68509) Energy and Power Engineering Part 4 SEM 8
- 2] (101) Bachelor of Engineering (84951) Energy & Power Engineering Part 4 SEM 8
- 3] (1154) B.Tech. CBCS (84844) Energy & Power Engineering Part 4 SEM 8