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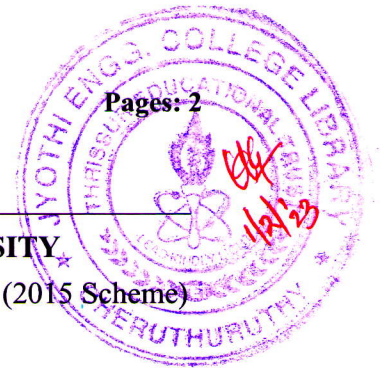
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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree (S, FE) Examination January 2023 (2015 Scheme)



Course Code: ME403

Course Name: ADVANCED ENERGY ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

Marks

- 1 a) Define renewable and non-renewable energy sources with example (5)
b) What are the advantages and disadvantages of steam power plant? (5)
- 2 a) Explain the functions of components of a Nuclear reactor with the help of a neat sketch. (10)
- 3 a) Define concentration ratio of a solar collector. What is its significance? (4)
b) Differentiate between flat plate and concentrating collectors with the help of neat sketches (6)
- 4 a) Explain the working of low temperature and medium temperature solar thermoelectric power plants with neat sketches. (10)

PART B

Answer any three full questions, each carries 10 marks.

- 5 a) Explain the advantages and disadvantages of wind power generation. (5)
b) Explain classification of wind turbines. (5)
- 6 a) Explain the working of solar wind hybrid system with the help of sketch of its lay out. (6)
b) Compare Horizontal and Vertical Wind Turbines (4)
- 7 a) What are the different categories of Biomass? Explain examples for each form (6)
b) What are the merits and demerits of Biomass energy? (4)
- 8 a) Explain any one thermo chemical conversion of biomass in detail with sketches. (7)
b) Differentiate between fixed dome and floating drum biogas plant (3)

PART C

Answer any four full questions, each carries 10 marks.

- 9 a) Write short notes about geothermal energy (4)
b) Explain any two types of Tidal power generation (6)

- 10 a) Explain the working of closed and open cycle MHD systems with neat sketches. (10)
- 11 a) Write short notes about methods of hydrogen storage (5)
b) Write short notes about mini and micro hydro power plants (5)
- 12 a) What are the causes and methods to control the ozone layer depletion? (6)
b) Explain green house effect and its relation with global warming (4)
- 13 a) Explain Eutrophication and its causes (5)
b) Explain causes and effects of Acid rain (5)
- 14 a) Explain land degradation and its causes (6)
b) Explain thermal pollution of water and its sources (4)
