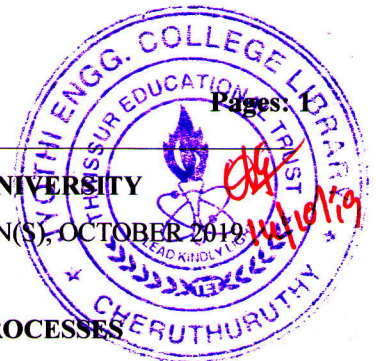


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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
EIGHTH SEMESTER B.TECH DEGREE EXAMINATION(S), OCTOBER 2019

Course Code: BT362

Course Name: SUSTAINABLE ENERGY PROCESSES

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

- | | Marks |
|--|-------|
| 1 a) What are the different renewable and non renewable energy sources | (6) |
| b) Explain the global energy scenario | (5) |
| c) Disadvantages of conventional energy sources | (4) |
| 2 a) Describe working principles of solar pond energy conversion system | (8) |
| b) Explain the working principle of flat plate collector? | (7) |
| 3 a) Explain renewable energy sources, potentials, achievements and applications | (4) |
| b) Explain working principle of solar p-v cells? | (8) |
| c) What are the problems with fossil fuels | (3) |

PART B

Answer any two full questions, each carries 15 marks.

- | | |
|---|------|
| 4 a) Explain the working of a 'wind turbine' with a properly labelled diagram | (7) |
| b) Differentiate between 'Horizontal axis turbines' and 'Vertical axis turbines' | (8) |
| 5 a) List out the applications of Biofuels ? | (5) |
| b) Differentiate pyrolysis and gasification? | (5) |
| c) List out various types of Biomass resources? | (5) |
| 6 a) Explain application and limitation wind energy ? | (5) |
| b) Explain the production of Biodiesel with a neat flow chart and its applications? | (10) |

PART C

Answer any two full questions, each carries 20 marks.

- | | |
|---|------|
| 7 a) What are the ocean thermal electric conversion strategies commonly employed? With detailed diagrams describe each one. | (10) |
| b) Give notes on positive and negative attributes of hydropower? | (10) |
| 8 a) Explain alkaline fuel cell; also explain their working principle and construction? | (6) |
| b) Define magneto-hydro dynamics and their working principle? | (10) |
| c) Classify fuel cell and their applications? | (4) |
| 9 a) Explain phosphoric acid fuel cell; also explain their working principle and construction? | (10) |
| b) Explain various geothermal energy conversion systems? | (10) |
