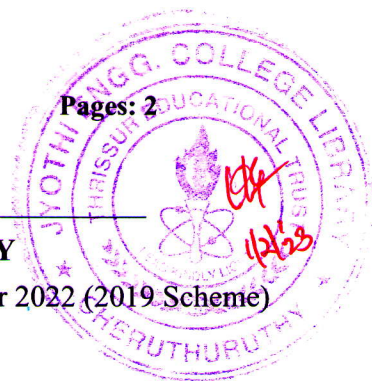


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech Degree Regular and Supplementary Examination December 2022 (2019 Scheme)

**Course Code: MCN201****Course Name: Sustainable Engineering**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions. Each question carries 3 marks*

Marks

- | | | |
|----|--|---|
| 1 | What is the need for sustainability? | 3 |
| 2 | Explain the nexus between technology and sustainable development | 3 |
| 3 | What are the causes of air pollution? | 3 |
| 4 | What is greenhouse effect? | 3 |
| 5 | What are the benefits of implementing environmental management system? | 3 |
| 6 | Explain the term circular economy | 3 |
| 7 | Differentiate between first, second and third generation bio fuels | 3 |
| 8 | What are the disadvantages of small hydro power plants? | 3 |
| 9 | What is meant by sustainable habitat? | 3 |
| 10 | What are the harmful impacts of transportation sector on sustainability? | 3 |

PART B*Answer any one full question from each module. Each question carries 14 marks***Module 1**

- | | | |
|----|--|----|
| 11 | a. Explain clean development mechanism - 7 marks | 14 |
| | b. Explain the concept of sustainable development - 7 marks | |
| 12 | a. Write notes on social, environmental and economic sustainability concepts - 9 marks | 14 |
| | b. What are the challenges for sustainable development? - 5 marks | |

Module 2

- | | | |
|----|---|----|
| 13 | What are the various sources of solid waste? Explain methods of solid waste management and zero waste concept | 14 |
| 14 | Explain carbon footprint and ways to reduce your carbon footprint | 14 |

Module 3

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|----|---|----|
| 15 | Write notes on life cycle analysis | 14 |
| 16 | Explain industrial ecology and industrial symbiosis | 14 |

Module 4

- | | | |
|----|--|----|
| 17 | Explain conventional and non conventional energy sources | 14 |
| 18 | How can energy be derived from oceans? | 14 |

Module 5

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|----|--|----|
| 19 | Explain the concept of green engineering | 14 |
| 20 | Write notes on sustainable cities | 14 |