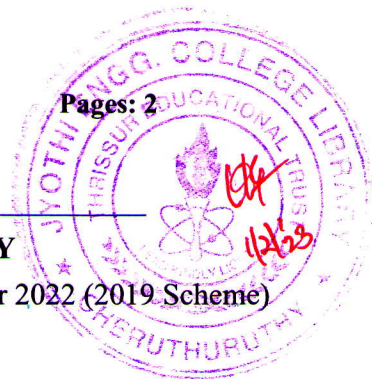


Reg No.: \_\_\_\_\_

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**

- |    |   |    |
|----|---|----|
| 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**

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

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