

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

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S3(S,FE)/S3(PT)(S) June 2024 (2019 Scheme)/S3(WP) (R) December 2023 Examination

**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 meant by sustainable development?                                 | 3 |
| 2  | What is the purpose of clean development mechanism?                       | 3 |
| 3  | Explain carbon trading                                                    | 3 |
| 4  | Write notes on zero waste concept                                         | 3 |
| 5  | Explain the term biomimicry                                               | 3 |
| 6  | What is industrial symbiosis?                                             | 3 |
| 7  | Differentiate between conventional and non conventional sources of energy | 3 |
| 8  | List the methods of extracting energy from oceans                         | 3 |
| 9  | Define green engineering                                                  | 3 |
| 10 | What is a sustainable city?                                               | 3 |

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

- |    |                                                                  |    |
|----|------------------------------------------------------------------|----|
| 11 | Explain the need and concept of sustainability                   | 14 |
| 12 | a. What are the measures of sustainable development? – 7marks    | 14 |
|    | b. What are the challenges to sustainable development? - 7 marks |    |

**Module 2**

- |    |                                                                                  |    |
|----|----------------------------------------------------------------------------------|----|
| 13 | Explain the various causes of water pollution and the methods to reduce the same | 14 |
| 14 | a. Write notes on global warming - 8 marks                                       | 14 |
|    | b. Explain climate change, its effects and control measures - 6 marks            |    |

**Module 3**

- |    |                                                              |    |
|----|--------------------------------------------------------------|----|
| 15 | Write notes on environmental management system and standards | 14 |
| 16 | Explain environment impact assessment                        | 14 |

**Module 4**

- 17 a. Write a note on fuel cells – 7 marks 14  
b. Write notes on bio fuels – 7 marks
- 18 How geothermal energy can be captured? 14

**Module 5**

- 19 a. Explain the basic concepts of sustainable habitat - 5 marks 14  
b. Explain the methods for increasing energy efficiency in buildings  
– 9 marks
- 20 Write notes on sustainable urbanisation 14