



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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S3 (R,S) / S3 (WP) (R,S) / S3 (PT) (S,FE) Examination November 2024 (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  | Explain the three pillars of sustainable development.                      | (3) |
| 2  | List any four Millennium Development Goals?                                | (3) |
| 3  | Explain the phenomena of ozone layer depletion.                            | (3) |
| 4  | How do carbon credits reduce carbon emissions? Write one example           | (3) |
| 5  | Explain with figure the 'cradle to grave' approach used in LCA.            | (3) |
| 6  | List any three benefits of ISO 14000.                                      | (3) |
| 7  | List any three examples of renewable energy and explain any one in detail. | (3) |
| 8  | Distinguish between conventional and nonconventional energy.               | (3) |
| 9  | Suggest any three examples for green materials with valid reasons.         | (3) |
| 10 | Write three tips to save energy in a green home.                           | (3) |

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

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|----|---|------|
| 11 | Describe Clean Development Mechanism, with suitable example.  | (14) |
| 12 | a. Technologies have damaged our world. Substantiate the statement with two relevant points in detail.  | (7)  |
|    | b. How does technology help us to achieve sustainable development goals? Choose any two sustainable development goals and explain with two examples each. | (7)  |

**Module 2**

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|----|---|-----|
| 13 | a. Describe any two adverse impacts due to climate change   | (7) |
|    | b. Write 3R approach. How do you use this concept to manage kitchen waste, electronic waste and old clothes at your home. | (7) |

- 14 Explain the effects of air pollution on:
- a. Human health (10)
  - b. Vegetation. (4)

**Module 3**

- 15 a. Define Environmental Management System (EMS). Suggest six tips to make your Institution environmental friendly. (7)
- b. What is ISO:14001:2015? Write any five benefits. (7)
- 16 Explain Environmental Impact Assessment studies. Write the need and significance of conducting Environmental Impact Assessment (14)

**Module 4**

- 17 The ocean forms one of the largest yet least explored renewable energy sources on earth. Comment on the statement with suitable examples. (14)
- 18 What are biofuels? Explain in detail any four types of biofuels. (14)

**Module 5**

- 19 Explain any seven guiding principles of Green Engineering. (14)
- 20 Explain the term "sustainable city". Explain five major characteristics of a sustainable city. (14)

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