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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree Supplementary Examination August 2024 (2019 Scheme)

Course Code: CET468

Course Name: CLIMATE CHANGE AND SUSTAINABILITY

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

- | | | Marks |
|----|--|-------|
| 1 | Write a note on Earth's Energy Budget | (3) |
| 2 | Write three adverse impacts of temperature inversion | (3) |
| 3 | Define Global Warming Potential. Give two examples | (3) |
| 4 | What is meant by carbon sequestration? Give one example each for natural and artificial carbon sequestration | (3) |
| 5 | Which are the three pillars of sustainability? Explain | (3) |
| 6 | What is zoning? Explain its significance in climate change mitigation | (3) |
| 7 | Suggest two climate resilient measures that can be adopted to address the impacts due to extreme heat | (3) |
| 8 | Give two nature based solutions to manage urban floods | (3) |
| 9 | Define sustainability. How does sustainable concepts lead to mitigate climate change impacts | (3) |
| 10 | How will you apply sustainability engineering in energy management? Give two examples | (3) |

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

- 11 Differentiate between climate and weather. Describe four important factors that influence climate (14)

OR

- 12 Define Lapse rate. Explain the different types of lapse rate. Explain with suitable figures how the lapse rate affects the stability of atmosphere (14)

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Module II

- 13 Explain the concept of greenhouse effect. List four major anthropogenic drivers of climate change and explain how they contribute to climate change (14)

OR

- 14 What are the different ways by which human health is affected by climate change? Explain any four in detail, with one example each (14)

Module III

- 15 a) Define urbanization. List two positive and two negative impacts each due to urbanization (4)
b) Briefly describe 5 causes for formation of urban heat islands and 5 effects due to urban heat islands (10)

OR

- 16 What is meant by industrialization? Briefly explain how industrialization leads to deterioration of the environmental components – air, water and soil, stating four examples each (14)

Module IV

- 17 Differentiate between mitigation and adaptation strategies in climate change. Explain with three examples each, in the context of global warming (14)

OR

- 18 a) Define circular economy. Explain the role of circular economy in climate change scenario with one example (7)
b) Describe any one green energy solution to reduce the carbon emissions due to the conventional energy production (7)

Module V

- 19 Describe the cap-and-trade concept in Kyoto protocol. Explain the Kyoto mechanisms in detail (14)

OR

- 20 Describe any one case study on a climate-based disaster that has occurred in last 15 years. Discuss the risk reduction measures adopted by the authority to address the same (14)
