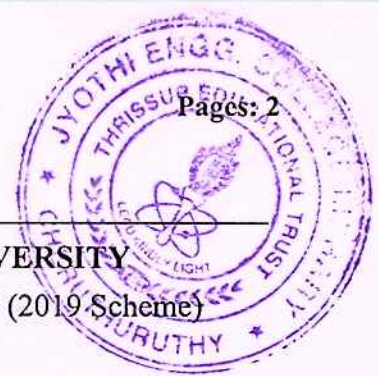


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S3 (S,FE) (FT/WP/PT) Examinations June 2026 (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 List and briefly explain the three flexible mechanisms which emerged after Kyoto Protocol. (3)
- 2 Cite three points which show the nexus between sustainable development and energy technology. (3)
- 3 List any three methods to control water pollution. (3)
- 4 Explain zero waste concept in solid waste management. (3)
- 5 What are the four main steps adopted for Life Cycle Analysis. (3)
- 6 Comment on the statement "Nature is the most successful designer and the most brilliant engineering that has ever evolved". What is the term that is associated with this context? (3)
- 7 Write three advantages and three disadvantages of tapping wind energy. (3)
- 8 Distinguish between first, second and third generation biofuels. (3)
- 9 Write a short description about Sustainable Habitat. (3)
- 10 In expanded form, list the three primary green building rating systems in India. (3)

PART B

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

Module 1

- 11 Explain in detail any seven Sustainable Development Goals with their targets and indicators (write one target and indicator per goal). (14)
- 12 a) Explain the concept of Economic Sustainability. (6)
b) Technology may affect sustainability in positive and negative ways. Give two examples each for both cases. (8)

Module 2

- 13 a) Explain the ways and means by which you can reduce your carbon footprint (6)

(Write any 6 points)

(8)

- b) Discuss the Environmental Protection Act of 1986. State clearly at least five rules made under this Act.
- 14 a) In 1992, the Union government came out with a "Policy statement for abatement of pollutions." This policy statement adopted basically four fundamental guiding principles. Name them. (4)
- b) Describe Global Warming. Explain any two causes and four effects of it. (10)

Module 3

- 15 a) Explain the different steps involved in the conduct of Environmental Impact Assessment. (8)
- b) Write three examples of Biomimicking. (6)
- 16 a) Explain with the aid of a diagram the difference between linear and a circular economy. (6)
- b) Define Industrial Ecology. Explain it with a diagrammatic example. (8)

Module 4

- 17 a) Explain with suitable diagrams, the principle of geothermal energy generation. (7)
- b) What is biomass energy and how it is extracted? (7)
- 18 a) Write any three advantages and three disadvantages of Small Hydro Power. (6)
- b) Explain with schematic diagrams the three methods by which energy be derived from oceans. (8)

Module 5

- 19 a) Describe any five methods by which you can increase energy efficiency in buildings. (10)
- b) With the help of four points, explain why many people consider the existing transportation system as unsustainable? (4)
- 20 a) Explain Green Engineering. (4)
- b) Enumerate the reasons for the need of sustainable cities. (4)
- c) Write any six basic features of a sustainable city. (6)
