

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024****Subject Code:3161312****Date:20-05-2024****Subject Name:Global Warming and Climate Change****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain the term Carbon Dioxide Equivalent Emission with example. **03**  
 (b) Explain the sources of Methane emission. **04**  
 (c) Describe the Natural and Enhanced Green House Effect in detail. **07**

- Q.2** (a) Define the following terms: **03**  
 Climate Change, Climate Adaptation and Climate Resilience.  
 (b) Differentiate between Global Warming and Climate Change. **04**  
 (c) Enlist and explain sources and impacts of any THREE Green House Gases. **07**

**OR**

- (c) Explain the Global Carbon Cycle in detail. **07**
- Q.3** (a) Enlist the ways to stabilize Atmospheric Carbon Dioxide Concentration. **03**  
 (b) Explain the concept of Carbon Capture and Storage (CCS). **04**  
 (c) Explain the types of CO<sub>2</sub> Capture technologies in detail with schematic block diagram. **07**

**OR**

- Q.3** (a) Explain the concept of Enhanced Oil Recovery (EOR). **03**  
 (b) Explain the concept of Carbon Capture and Utilization (CCU). **04**  
 (c) Enlist and explain options to mitigate the Climate Change in detail. **07**

- Q.4** (a) Define the term Environmental Economics. **03**  
 (b) Discuss the role of IPCC. **04**  
 (c) Describe the Global Wind Circulation in detail. **07**

**OR**

- Q.4** (a) Discuss the role of UNFCCC. **03**  
 (b) Describe the Joint Implementation (JI) mechanism. **04**  
 (c) Describe the role of Ocean in Climate Change. **07**

- Q.5** (a) Explain the Global Circulation Model. **03**  
 (b) Describe the elements of Weather and Climate Modelling. **04**  
 (c) Discuss the applications of Climate Modelling. **07**

**OR**

- Q.5** (a) Explain the term Representative Concentration Pathway (RCP) Scenario. **03**

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| <b>(b)</b> | <b>Discuss the Global Climate Impacts on the Human Health.</b> | <b>04</b> |
| <b>(c)</b> | <b>Describe the elements of Weather and Climate Modelling.</b> | <b>07</b> |

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