

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3161312****Date:15-12-2022****Subject Name:Global Warming and Climate Change****Time:02:30 PM TO 05:00 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.

MARKS

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|------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Q.1 | (a) | Explain the terms weather and climate. Justify if both the terms can be used interchangeably or not. | 03 |
| | (b) | What is meant by climate variability and climate change. | 04 |
| | (c) | Explain the significance of Global warming and Climate change in Environmental Engineering field. | 07 |
| Q.2 | (a) | Explain Greenhouse effect. | 03 |
| | (b) | How does energy gets balanced on the Earth? | 04 |
| | (c) | State the elements of the Climate. Explain any two in detail. | 07 |
| | | OR | |
| | (c) | Compare and contrast the natural and anthropogenic causes of climate change. | 07 |
| Q.3 | (a) | Give the statistical contribution of greenhouse gases in the atmosphere. | 03 |
| | (b) | During past changes in the climate, many forms of flora and fauna were able to migrate to areas where the new climate suited them. Why could this option not be available to many species as the climate changes in the future? | 04 |
| | (c) | Elaborate any one case study as an evidence of Climate change. | 07 |
| | | OR | |
| Q.3 | (a) | What is the COP? | 03 |
| | (b) | State the objectives of IPCC. | 04 |
| | (c) | Explain the consequences on economy of a country in times of extreme weather events. | 07 |
| Q.4 | (a) | What is meant by a climate model? | 03 |
| | (b) | Explain testing the validity of models. | 04 |
| | (c) | Enlist and explain the various types of models used for modeling the climate. | 07 |
| | | OR | |
| Q.4 | (a) | How has climate change created an impact on India. | 03 |
| | (b) | Explain the concept of Carbon Capture and Sequestration. | 04 |
| | (c) | An estimate of the average rise in sea level is a useful measure of the future impact of global warming in terms of damage to property and loss of life. Justify the statement. | 07 |
| Q.5 | (a) | Explain global warming in brief. | 03 |
| | (b) | List the models used for CO ₂ storage through EOR. Explain any one. | 04 |
| | (c) | Write a detailed note on the Kyoto Protocol. | 07 |

OR

- Q.5** (a) Enlist the important findings of IPCC AR5. **03**
(b) Explain Environmental economics as a part of Climate change policies and legislation. **04**
(c) Draw a neat and labeled diagram of global carbon cycle and explain it. **07**
