

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: I MSc
BRANCH: PHYSICS**

**SEMESTER : IV
SESSION : SP/2025**

SUBJECT: SEC405 WEATHER FORECASTING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|---|-------|-----|
| Q.1(a) | Discuss the vertical distribution of temperature. What are the different parts of the atmosphere as per temperature variation? Explain along with figure. | [5] 1 | 1 |
| Q.1(b) | What is anticyclone? Discuss the weather pattern associated with it. Make suitable figures. | [5] 1 | 2 |
| Q.2(a) | What are the main forces that drives the wind? Discuss in detail. | [5] 2 | 2,3 |
| Q.2(b) | Write the statement of Wien's displacement law, Stefan Boltzmann's Law and Kirchhoff's law of radiation. | [5] 2 | 2 |
| Q.3(a) | What is thunderstorm? Discuss its different types. | [5] 3 | 3 |
| Q.3(b) | Write short notes on: Air Masses, and Fronts. | [5] 3 | 2 |
| Q.4(a) | What are the different types of causes which may cause climate change? | [5] 4 | 3 |
| Q.4(b) | Discuss the Chapman cycle for ozone formation and destruction. | [5] 4 | 3 |
| Q.5(a) | What are the different types of weather forecasting? | [5] 5 | 3,4 |
| Q.5(b) | Discuss the different methods of weather forecasting? | [5] 5 | 3,4 |

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