



University of Ruhuna - Faculty of Technology
Bachelor of Biosystems Technology
Level 4 (Semester II) Examination, November/December 2025
Academic year 2023/2024

Course Unit: BSTE 4242 – Weather Forecasting Technology (Theory) Duration: 1.5 hours

Index No:

INSTRUCTIONS: Number of pages: four (4)
Part I - Answer all questions – 50 minutes.
Part II - Answer two (2) questions only – 40 minutes

Part I-Answer ALL Questions

1.
a. Briefly explain the terms of weather analysis given below (15 marks)

i. Dew Point	
ii. Forecasting	
iii. Isotherms	

- b. Define following weather elements and write the instrument used to measure each of them. (10 marks)

Element	Definition	Instrument
Humidity		

Air Temperature		
Air Pressure		
Wind		
Precipitation		

2.

a. Fill in the blanks with respect to the movement of air in the atmosphere. (10 marks)

- I. Moving air is called
- II. A gentle wind is called
- III. A strong wind is called
- IV. Very strong winds are called
- V. along with thunder and lightning are called

b. Differentiate Cold front and Warm front with suitable diagrams. (15 marks)

3.

a. Name five key principles of optics that explain most optical phenomena. (10 marks)

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b. State major features of the following optical phenomena. (15 marks)

i	Rainbow	
ii	Lunar Eclipse	
iii	Halo	

4. a. Briefly explain how following factors affect for climate and weather. (15 marks)

i	Latitude	
ii	Altitude	

iii	Distance from the sea	
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b. Following questions related to the **dry and wet bulb thermometer**. (10 marks)

i. What does the dry bulb thermometer measure?	
ii. Why is the wet bulb reading lower than the dry bulb reading?	
iii. What happens if both bulbs show the same reading?	

Part II -Answer ONLY TWO Questions

1.
 - a. Briefly explain how cloud formation helps meteorologists to predict weather more accurately. (20 marks)
 - b. Briefly discuss the major challenges meteorologists face in providing accurate weather forecasts. (30 marks)

2. Write short notes on any of two (2) of the following with suitable diagrams.
 - a. Water cycle and saturation process (25 marks)
 - b. Latent heat and its importance in weather processes. (25 marks)
 - c. Bi-modal distribution of rainfall pattern in Sri Lanka (25 marks)

3.
 - A. Briefly explain how changing rainfall patterns influence agricultural productivity in Sri Lanka? (20 marks)
 - B. Comment on the following statement: "What human actions have accelerated global climate change?" (30 marks)

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