

B.Sc 4th Semester (Honours) Examination, 2020-21

PHYSICS

Course ID: 42415

Course Code: SH/PHS/405/SEC-2

Course Title: Weather Forecasting (SEC-T4)

Time: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Section-I

1. Answer any *five* questions: 2×5=10

- (a) What is the estimated rise in temperature in the last 100 years due to global warming?
- (b) Differentiate between PM 2.5 and PM 10 that cause air pollution? What should be their range for a good air quality?
- (c) Define and give examples of particulate matters.
- (d) Define lapse rate.
- (e) Why temperature decreases with altitude in the troposphere?
- (f) Name the temperature sensors used in radiosonde measurements.
- (g) What is probability forecast?
- (h) Write down the criteria of choosing weather station.

Section-II

2. Answer any *four* questions: 5×4=20

- (a) Explain the use of satellites for weather forecasting.
- (b) Define acid rain. How does it form and what are the consequences from environmental point of view? [2+3]
- (c) What do you understand by the term climate change? Give a description on how the climate is changed over a period of time in a particular region. [2+3]
- (d) Explain the importance of measuring meteorological parameters.

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- (e) How the new data processing technologies in Big Data database systems allow for precise prediction of climate disasters?
- (f) What changes in natural ecosystems are caused by the ongoing global warming process?

Section-III

3. Answer any *one* question: 10×1=10

(a) What is weather forecasting? What are the types of weather forecasting? Write down the weather forecasting methods. [2+4+4]

(b) Draw a diagram that depicts the temperature variation with height up to 100 km altitude. Name the different layers formed and their expected heights in the tropical region. Explain the variability of temperature in these different layers. [3+2+5]
