

B.Sc. 4th Semester (Honours) Examination, 2022

PHYSICS

Course ID: 42415

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

Course Title: Weather Forecasting

Time: 2 Hour

Full Marks: 40

The figures in the margin indicate full marks

Section-I

1. Answer *any five* of the following questions: (2× 5 = 10)

- (a) What is relative humidity?
- (b) What is a weather satellite?
- (c) State Bayes 'theorem.
- (d) What is the difference between weather and climate?
- (e) Explain the term 'Nowcasting'.
- (f) Name the temperature sensors used in radiosonde measurements.
- (g) Differentiate between cyclonic and anticyclonic circulation.
- (h) What do you mean by 'Acid rain'?

Section-II

2. Answer *any four* of the questions: (5× 4 = 20)

- (a) What is Doppler radar? How does Doppler radar work?
- (b) How does weather forecasting utilize statistics and probability?
- (c) What are the weather phenomena happening in the troposphere?

- (d) Explain a few types of weather conditions.
- (e) How the new data processing technologies in big 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** of the questions:

(10× 1 = 10)

- (a) Explain different types of weather forecasting. What are the different processes used in weather forecasting? Explain all. [4+6]
- (b) What are the methods to take air temperature observations? What is the routine network operated by India Meteorological Department for preparing weather charts in India? Explain any one of the methods with instrumentation details to measure wind speed and direction, humidity and rainfall. [2+2+6]