

**B.Sc. 3rd Semester (Honours) Examination, 2023 (CBCS)**

**Subject : Physics**

**Course : SEC-1**

**(Weather Forecasting)**

**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.*

1. Answer *any five* of the following questions: 2×5=10
- (a) Why are rain clouds look grey?
  - (b) What causes a rainbow?
  - (c) Why is it hot in summer and cold in winter?
  - (d) Write down two conditions for development of air mass.
  - (e) Why tropical cyclones weaken over land after rainfall?
  - (f) What is ozone layer and why it is important?
  - (g) Explain Polar easterlies.
  - (h) What is the difference between condensation and precipitation?
2. Answer *any two* of the following questions: 5×2=10
- (a) What is lightning? How does lightning occur? What causes thunder sound with lightning? 1+2+2
  - (b) What is hail? How does hail form? Why do the tropics have more precipitation than other locations? 1+2+2
  - (c) Why is the Troposphere considered to be the most significant layer of the atmosphere? 5
  - (d) What is the cause of wind? Show that the wind power is proportional to wind velocity. 2+3
3. Answer *any two* of the following questions: 10×2=20
- (a) What do you understand by the phenomenon of the inversion of temperature? Write down the favourable conditions for temperature inversion. Explain how does it impact the atmosphere and the weather. 2+3+5
  - (b) What is fog? How does fog form? Differentiate fog, haze and mist. What is frontal system? Describe different fronts. 1+2+3+1+3
  - (c) What are short-range, medium-range and long-range weather forecasting? State the importance of weather forecasting. Discuss briefly any one method used for weather forecasting. What are the problems of weather forecasting? 3+2+4+1
  - (d) What is global warming? Write two natural and two man-made causes of global warming. What is a carbon footprint? How can one reduce his/her carbon footprint? 2+2+2+2+2