

**Indian Maritime University**  
**(A Central University, Govt. of India)**

**Supplementary Examinations – March / April 2024**

**Programme Name: B Sc (NS)**

**Semester: 4**

**Subject Code: UG21T5405**

**Subject Name: Meteorology**

---

Date: 21.03.2024

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

---

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.
- (iii) Ships Weather Code to be used.

**Section A**

Ten MCQ's of 01 Mark each – Choose the correct answer as applicable.

1. \_\_\_\_\_ Breeze usually blows during day time
  
2. What among the following are the objectives of the World Meteorological Organization:
  - a. To facilitate the exchange of weather information across national borders
  - b. To provide the framework for international cooperation at a global scale on meteorological issues
  - c. To be the United Nation Organizations authoritative voice on the state and behaviour of the Earth's atmosphere
  - d. All of the above
  
3. An equipment used to receive weather information in telex format is \_\_\_\_\_
  
4. A ship which collects weather information voluntarily is called \_\_\_\_\_
  
5. How is the tidal range on the days of Spring tide?
  - a. Tidal range is maximum
  - b. Tidal range is minimum

- c. Tidal range is exactly at the mean average for the month
  - d. Neither Spring nor Neap tides influence the tidal range
6. The curved vertical lines on a Barograph chart paper:
- a. Have a curvature which depends on the speed of the drum rotation
  - b. Have exactly the same radius of curvature as the diameter of the rotating drum
  - c. Have exactly the same radius of curvature as the pen arm
  - d. Have exactly the same radius of curvature as the radius of the rotating drum
7. \_\_\_\_\_ is formed due to wind blowing at a distant area
8. What are Weather Analysis Charts?
- a. Charts showing the existing weather situation at the preceding synoptic hour
  - b. Charts showing the predicted weather situation for a specified future time
  - c. Charts showing the existing weather situation at the preceding additional synoptic hour
  - d. Charts showing the predicted weather situation for the next 24 hours
9. What is the cause of the formation of Advection fog off Newfoundland coast?
- a. The moisture laden winds of the Southwest monsoon
  - b. The convergence of the Gulf Stream & the Labrador current
  - c. The large amounts of water vapour near the equatorial regions
  - d. The extremely cold weather in the Newfoundland
10. Hydrometer is used to measure dew point- True/False

### **Section B**

Five Questions of 02 Marks each

- 11. Describe the weather associated with it a Anticyclone isobar pattern
- 12. Describe Col & warm Front
- 13. What factors affect the salinity of surface seawater and how?
- 14. Describe the Warning signs of an approaching TRS
- 15. Explain the characteristics and location of the ITCZ.

### **Section C**

Seven Questions of 10 Marks each of which any 05 questions to be answered.

16.

(a) With the help of sketches, explain the formation of Land and Sea Breeze. (5 marks)

(b) Describe the Northeast monsoon regime occurring seasonally over the China seas. (5 marks)

17. (a) Describe the SW monsoon over the Arabian sea (5)  
(b) Describe the Classification and properties of air masses (5)

18.

(a) Write a short note on the Voluntary Observing Fleet program under the Indian Meteorological Department. (5 marks)

(b) Explain the formation of Radiation Fog and Advection Fog. (5 marks)

19. (a) Describe Different types of ice encountered at sea. (5 Marks)  
(b) Describe the Action to be taken when the presence of TRS is confirmed. (5 Marks)

20.

(a) Explain in detail the 1-2-3 theory of Tropical Revolving Storm avoidance with the help of a sketch. (6 marks)

(b) Enumerate and explain in brief the ideal conditions for the formation of a Tropical Revolving Storm. (4 marks)

21. (a) Describe the Properties of ocean water and their relationship (5 Marks)  
(b) Explain how weather information is collected and disseminated to ships (5 Marks)

22.

(a) Explain the danger associated with the accumulation of large quantities of ice on ships and the measures that can be taken to avoid ice accumulation. (5 marks)

(b) Describe the principal, use and operation of the Barograph. (5 marks)

