

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2025
Programme Name: (DNS)
Semester: II
Subject Code: UD11T6201
Subject Name: Marine Meteorology

Date: 30.05.2025
Duration: 03 Hrs

Max Marks: 70
Pass Marks: 35

General Instructions

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

Section A

(Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable)

1. What happens when we go up in the atmosphere?
 - a) Temperature decreases and pressure increases
 - b) Temperature increases and pressure decreases
 - c) Both temperature and pressure increases
 - d) Both temperature and pressure decreases

2. Winds blow spirally inwards towards a depression, anti-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
 - a) True b) False

3. What is it called when a sample of air reaches saturation point of temperature?
 - a) Dew point
 - b) Evaporation point
 - c) The atmosphere
 - d) Absolute humidity

4. Visibility at sea cannot usually be ascertained accurately and hence obtained by estimation.
 - a) True b) False

5. When a current from equatorial regions passes through higher latitudes, it will be a _____
 - a) Warm current b) Cold Current

6. The Hygrometer is an instrument for obtaining the relative humidity and/ or dew point temperature of air.

a) True b) False

7. The formation of tropical cyclones involves warm, moist air rising and condensing. The rising air creates an area of low pressure, increasing surface winds.

a) True
b) False

8. The formation of a frontal depression is called _____.

a) Frontolysis b) Frontogenesis c) Occlusion d) Barometric tendency

9. As recommended by the World Meteorological Organization (WMO), each government recruits several merchant ships called the Voluntary Observing Fleet.

a) True b) False

10. A _____ Facsimile chart is the predicted situation at a specified future time, based on present indications.

a) Analysis b) Prognosis

Section B

(Five Questions of 02 Marks each)

11. Explain Dry Adiabatic Lapse Rate (DALR) and Saturated Adiabatic Lapse Rate (SALR).

12. What is a col or a void between a convergence of pressure systems?

13. Explain the need for meteorological codes.

14. Define 'warm front' and 'cold front'.

15. Describe "Routeing of Ships" and its advantage for safe and efficient vessel navigation.

Section C

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

16. Ship's Course 045° speed 15 knots. Apparent wind 100° at 20 knots was obtained using the ship's anemometer. Choose an appropriate scale, make and label a wind triangle and find the direction and speed of true wind. (10 Marks)

17. List and describe the ten basic cloud types. (10 Marks)

18. Explain the formation of radiation fog and advection fog. (10 Marks)

19. Describe the characteristics of the following ocean currents and state their geographical region (location) (5x2=10 Marks)

- a) Falkland current
- b) Labrador current
- c) Kuroshio current
- d) North Atlantic Drift
- e) Gulfstream

20. Briefly explain different types of ice, icebergs, limits of icebergs, accumulation of ice on ships and organizations for issuing ice warnings. (10 Marks)

21. Describe Ideal conditions for the formation of TRS. Explain with a diagram, the actions to be taken for the avoidance of storm centres. (10 Marks)

22. a) Describe the services provided for shipping by Meteorological Offices. Define Voluntary observing fleet under I.M.D; type and nature of Information collected. (5 Marks)

b) What are the factors affecting the properties of an air mass? (5 Marks)

