Indian Maritime University

(A Centra2l University, Govt of India)

End Semester Examinations – June 2025

Programme Name: B Sc (NS)

Semester: IV

Subject Code: UG21T5405

Subject Name: METEOROLOGY

Date: 09.06.2025	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) Ship Weather Code is permitted.

Section A

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

1. _____ affects navigation and communications when using electro-magnetic waves.

   a. Stratosphere
   b. Toposphere
   c. Thermosphere
   d. Mesosphere.

2. What does the ozone layer protect us from?

   a. Insolation
   b. Infrared rays
   c. U/V rays
   d. None of the above

3. Isallobar is:

   a. Line joining Places Having same atmospheric temperature
   b. Line joining Places Having same atmospheric Pressure
   c. Line joining Places Having same Wind speed
   d. Line joining Places Having same change of Atmospheric pressure during a specified time.

4. Maritime Polar Air mass is:

   a. Cold and Moist

b. Warm and Dry
c. Warm and Moist
d. Cold and Dry

5. The Eye or Vortex of a TRS is having diameter of

a. 5 - 30 miles
b. 6 - 40 miles
c. 4 - 40 miles
d. 4 – 30 miles

6. The arrival of _____can prevent upwelling from occurring.

a. Drift
b. El Nino
c. Virga
d. Sleet

7. The cold water from the deeper water replaces the warm surface water and nutrients are available, it is due to;

a. El-nino
b. Drift
c. Upwhelling
d. Surface currents

8. The boundary between two adjacent air masses is well defined by their different characteristics and is called a ---- --------

9. Anabatic winds forms during - ----------time.

10. What is a Tidal Bore or Bore tides?

a. Tides occurring during the waning phase of the moon
b. Tides occurring during the waxing phase of the moon
c. Tidal wave formed at the time of slack period
d. An incoming tide which travels up a river or narrow bay reversing the direction of the river or bay's current.

Section B

Five Questions of 02 Marks each (2 x 5=10 Marks)

11. What is Voluntary Observing Ship and a selected ship station?
12. What is Coriolis force.? How it affects the wind blowing over the sea and land?
13. What are Prognostic & Synoptic charts?
14. What causes Ocean currents?
15. Explain a Storm Surge.

Section C

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

16.a) Describe the meteorological conditions likely to lead to both fresh and seawater ice accretion on vessels. (5 Marks)

16.b) What factors affect the salinity of the surface seawater and how? (5 Marks)

17.a) What avoiding action should be taken when the approach of a Tropical Revolving storm is confirmed? (5 Marks)

17.b) Write the comparison between Tropical Revolving storm and Temperate latitude Depression (Extra Tropical depression). (5 marks)

18.a) Describe Principle, use and operation of Anemometer.? (5 Marks)

18.b) What are ships Performance curves? Describe briefly. (5 Marks)

19.a) Explain the weather associated with Warm Front. (4 Marks)

19.b) What are the factors affecting the properties of an air mass? (6 Marks)

20.a) Comparison between Land Breeze & Sea Breeze. (3 Marks)

20.b) What are the types of Ice, explain Icebergs of Glacier & Ice shelf origin? (3 Marks)

20.c) What are the different types of Voluntary Observing Fleet Vessels? (4 Marks)

21. Decode the following. (10 marks)

BBXX VHAN 16003 99000 10469 41593 70510 10285 20208

40088 53036 70694 84299 22242 00206 20401 327// 40808

22. Describe the characteristics of the following currents and show it on the map

a) Falkland current

b) Labrador current

c) Kuroshio current

d) North Atlantic Drift

e) Gulfstream (5x2=10 marks)