

INDIAN MARITIME UNIVERSITY
(A Central University Government of India)
END SEMESTER EXAMINATIONS-June-July 2019
Diploma in Nautical Science
Semester -I
NAVIGATION-II -BRIDGE EQUIPMENT, WATCH-KEEPING AND
METEOROLOGY
(UD11T3105)

Date:28-06-2019

Max.Marks:70

Time: 2 hours

Pass Marks:28

1. Answer **any Four** questions from **Part A**.

2. Question No.6 is compulsory. Answer any two questions from the rest in **Part B**.

3.Note: Non programmable scientific calculator is permitted.

Part – A : BRIDGE EQUIPMENT AND WATCH KEEPING

1a.Explain with a neat sketch, principle of Sextant. Explain the four correctable errors. [5 marks]

b.Explain the principle of Echo Sounder. How does this equipment help the mariner? [5 marks]

2a. Fill in the blanks. [1 x 5 = 5 marks]

- 1) Vertical sextant angle of a celestial object is called -----.
- 2) Error on Magnetic compass comprises of ----- and -----.
- 3) Gyro compass error must be checked once in every -----.
- 4) Echo sounder gives ----- which prevents vessel from running aground.
- 5) Azimuth mirror is used for taking bearings of ----- and ----- objects.

b. List out the 'Advantages' and 'Disadvantages' of the 'Gyro compass' over the 'Magnetic compass'. [5 marks]

3a.Describe the 'Primary Duties' of Officer on Watch on bridge. [5 marks]

b.Why is 'Look-Out' important while vessel is at sea? What are the duties of a 'Look-Out' on bridge? [5 marks]

4a.Define the following : [2 x 2 = 4 marks]

- 1) Vessel 'Not under Command'.
- 2) Restricted visibility.

b. As per Rule 09 – Narrow Channel; what is the procedure of power driven vessels overtaking each other? [6 marks]

5a. A vessel of 280 m in length has run aground. Which lights and day-light shapes, should she exhibit? [5 marks]

b. What are manoeuvring signals? List different manoeuvring signals used in the collision regulations. [5 marks]

Part – B : METEOROLOGY

6a. Sketch only, a neat diagram showing temperature graph through different layers of atmosphere & separation zones with heights. [5 marks]

b. Write briefly – i) Mesosphere ii) Environmental Lapse Rate. [5 marks]

7a. Describe properties of Water vapour. [5 marks]

b. Describe the nature of Solar Radiation. [5 marks]

8. With a neat sketch explain the principle & working of a Barograph. [10 marks]

9. Fill in the Blanks appropriately or state True/False [2x5=10 marks]

1) _____ are the lines drawn on a weather map joining the places having the same barometric pressure tendency.

2) 1015.23 mb is the mean sea level pressure (True/false).

3) When air temperature actually increases with height, this condition is known as _____.

4) Water Vapour gives off latent heat which is an important source for _____ and _____.

5) Isobars change direction by almost 90 deg when passing from one air mass to other. (True/ False)
