

INDIAN MARITIME UNIVERSITY
(A Central University Government of India)
END SEMESTER EXAMINATIONS – DECEMBER 2019
Diploma in Nautical Science
Semester I
UD11T1105- Navigation II: Bridge Equipment, Watch keeping,
Meteorology

Date: 13.12.2019
Time: 2Hrs

Max. Marks: 70
Pass Marks: 28

Note: Q1 is compulsory answer any three from the remaining questions in Part A & Q6 is compulsory answer any two from the remaining questions. Use of Norie's Tables and Nautical Almanac 2008 is permitted. Use BA chart-813. Non-programmable scientific calculator is allowed.

PART - A

- Q1. **Fill in the blanks:** (10x1= 10 marks)
- a) Heading of the compass is read against _____ line.
 - b) Card of the wet card compass is made on _____ sheet.
 - c) Principle of echo sounder is $d = \frac{t}{2} \times \text{velocity}$.
 - d) _____ echoes is a shallow water effect of an echo sounder.
 - e) Arrow up position in an azimuth mirror is used to take bearings of _____ objects.
 - f) Fix marker is a control of _____.
 - g) When axis of telescope is not parallel to plane of sextant, we have _____ error.
 - h) _____ and _____ are the properties of free gyroscope.
 - i) Sextant is used for taking _____ of celestial bodies.
- Q2. a) Define principle of sextant and give the geometric proof with ray diagram.
b) List ten parts of a sextant. (2x5= 10 marks)
- Q3. a) Sketch profile view of a wet card compass and label it. (7 marks)
b) Why a mixture of ethyl alcohol and distill used in the compass. (3 marks)
- Q4. a) What are the responsibilities of give way vessel under IRPCS?
b) Under what circumstances, a vessel can make a departure from the rules. (2x5= 10 marks)
- Q5. What are the preparations to be made prior encountering restricted visibility? (10 marks)

PART – B

Q6. Fill in the blanks:

(5x2= 10 marks)

- 1). _____ is the densest layer of the Earth's Atmosphere.
- 2). the rate of change of Atmospheric pressure is _____ Hpa every _____ meters.
- 3). In Diurnal change of temperature, Maximum temperature occurs at _____ Hrs.
- 4). When water vapour condenses into exposed surfaces on or near the ground, it is called _____.
- 5). _____ are lines drawn on the weather map through the places having the same _____.

Q7. Sketch & explain the working of a Whirling Psychrometer.

(10 marks)

Q8. What is Diurnal variation of temperature? Explain why the Diurnal range of Temperature over land is larger than that over sea.

(10 marks)

Q9. What are the three main stages of Hydrological cycle? Explain each stage.

(10 marks)
