INDIAN MARITIME UNIVERSITY

(A Central University Government of India)

END SEMESTER EXAMINATIONS- DECEMBER 2018

DIPLOMA IN NAUTICAL SCIENCE

SEMESTER - I

NAVIGATION–II: BRIDGE EQUIPMENT,WATCHKEEPING &METEOROLOGY

(UD11T4105)

Date: 31-12-2018 Max. Marks: 70

Time: 02 hours Pass Marks: 35

Note: Answer **any four** questions **from part A** and **any three** Questions **from Part B.**

All questions carry equal marks.

PART– A : BRIDGE EQUIPMENT AND WATCH KEEPING

Q1. a. Define Principle of Sextant with ray diagram and geometric proof. [5 marks]

b. List ten equipments found on the ship's bridge and their uses in one line each. [5 marks]

Q2. a.State "True" or "False" in your answer sheet [1 x 5 = 5 marks]

(i) Lubber line indicates head of the ship---------

(ii) If Gyro error is "high",it needs to be added for getting true course-------

(iii) Gyro Compass error to be checked once in24 hours while at sea--------

(iv) Free Gyroscope has freedom of movement in2 axis only------

(v) Azimuth mirror is required for taking bearing of "Sun"-------

b. Draw a labelled cross sectional diagram of wet card compass.[5 marks]

Q3. a.What are the responsibilities of a lookout person? Describe. [5 marks]

b.Explain basic duties of O.O.W on bridge. [5 marks]

Q4. a.Define i) Vessel Underway , [2x2= 4 marks]

ii) Vessel engaged in fishing

b.When determining safe speed ,what factors are to be considered by all vessels (Rule no.6) [6 marks]

Q5. a. A power driven vessel 180 mtrs. Length, making way through water is N.U.C. What lights and shapes will be displayed by this vessel ,seen from right ahead in night and day respectively. [5 marks]

b. A power driven vessel 80 mts in length is anchored. What lights and sound signalling will be displayed/sounded in restricted visibility. [5 marks]

Part – B : METEOROLOGY

Note : **Question number 6 is compulsory, answer any two from the remaining.**

Q 6. a. Explain with neat diagram, different layers of atmosphere and separation zones with heights. [5x2=10 marks]

b. Define i) Barometric Tendency and ii) Isobars.

Q 7. a. Define in brief Reflection , absorption , scattering of solar radiation.

b. Describe Hydrological cycle with a neat sketch. [2.5x2=5 marks]

Q 8. Draw a sketch of Whirling Psychrometer. What precautions should be taken when using the equipment?. [6 & 4 marks]

Q 9. Fill in the blanks with appropriate terms : [2x5=10 marks]

i) The average lapse rate of atmospheric pressure is about _____ height in _____ .

ii) _____ and _____ are the errors of Aneriod Barometer.

iii) _____ is the mass of water vapour contained in a sample of air. It is expressed in _____.

iv) If hold temperature is _____ than the dew point of outside air, _____ freely.

v) Three stages of Hydrological cycle are _____ , _____ and _____.

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