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INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)

December 2016 End Semester Examinations
Diploma in Nautical Science - Second Semester (2015 batch onwards)

Navigation IV : Advanced Bridge Equipment, Watchkeeping and Meteorology
(UD11T3202)

Date : 15.12.2016

Maximum Marks: 70

Time: 3 Hrs

Pass Marks : 35

Note: Attempt Q. No. 1 and any other 3 Questions from Section A;
Attempt Q. No. 6 and any other 2 Questions from Section B;
All Questions carry equal marks. (7 x 10 = 70 marks)
Use of 'Ship's Weather Code 1982' is permitted in the exam hall

SECTION- A

Bridge equipment and watch-keeping

- 1) a. Explain the four stages that a potential collision situation may be divided into. (5)
b. State the sound signals made by the following: (5 x 1 = 5)
 - (i) A power driven underway indicating her manoeuvre as "I am operating astern propulsion".
 - (ii) A vessel intending to overtake another on her port side in a narrow channel.
 - (iii) A power driven vessel underway but stopped in restricted visibility.
 - (iv) A vessel constrained by her draught in restricted visibility.
 - (v) A vessel more 100m in length at anchor in restricted visibility.
- 2) a. State the segments of GPS. In brief explain the principle of fixing used in GPS. (5)
b. Draw a basic block diagram of a Marine Radar and label. (5)
- 3) a. List the information as provided by AIS. (5)
b. State the stages and alerting sequences of a BNWAS unit as stated in the minimum performance standards. (5)
- 4) a. State the circumstances under which an OOW shall call the Master on the bridge.(5)
b. With respect to STCW convention write short notes on: (2.5 x 2 = 5)
 - (i) Watch- arrangements (manning levels).
 - (ii) Handing / Taking over of a navigational watch.
- 5) List the entries made in: (5 x 2 = 10)
 - a. Compass error log
 - b. Movement book.

SECTION - B
(Meteorology)

6) Decode the following weather report: (10)

BBXX	ATVH	10123	99408	30492	41398
62828	10143	20082	40084	56028	76364
84364	22234	00175	20808	302//	41006

7) a. Explain the factors which cause condensation in the atmosphere. (5)

b. With a simple sketch show ten different types of cloud along with approximate heights above the earth's surface. (5)

8) a. With respect to Tropical revolving storms define : (5 x 1 = 5)

- (i) Path.
- (ii) Trough
- (iii) Dangerous semi-circle
- (iv) Vertex
- (v) Eye

b. Write short notes on: (2.5 x 2 = 5)

- (i) Katabatic winds,
- (ii) Buys Ballot's law

9) a) Explain in brief: (2.5 x 2 = 5)

- (i) Upwelling current
- (ii) Gradient current.

b) What are storm surges? (5)
