

**INDIAN MARITIME UNIVERSITY**  
**(A Central University, Govt. of India)**  
**December 2017 End Semester Examinations**  
**B.Sc. (Nautical Science) -Second Semester**  
**UG 21T3206- Chart Work & Collision Prevention Regulations**

Date: 12.12.2017

Total Marks : 70

Time: 3 Hours

Pass Marks:35

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**Note:**

- B.A Chart no. 2675 (English Channel) to be provided by examination centre.
- Question 1 is **compulsory**.
- Solve any other **four** questions from Part A and any **two** questions from Part B.
- Unless Variation & Deviation are given in the question;  
Variation may be taken from the Chart and corrected for the year 2017,  
Deviation as per S K Puri's book – Deviation Card III to be supplied by the examination centre.
- Admiralty List of Lights / other relevant publications may be supplied by the examination centre.

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**Part- 'A'**

- 1.** a) Draw the symbols for the following
- i) Rock awash at chart datum
  - ii) Submerged wreck dangerous to surface navigation
  - iii) Depth of 9.2 Metres in true position
  - iv) Tide rips
  - v) Nature of sea bed - Sand
- b) Define Nominal Range of a lighthouse.
- c) What do you understand by a scale 1:10,000 of a navigational chart?
- d) What are leading lights at harbour approaches?
- (5+2+2+1 = 10 marks)
- 2.** a) What information do you get from routeing chart? How many routeing charts are provided for the Indian Ocean?
- b) What is Chart Datum?
- c) What are clearing marks?
- d) What are sector lights?
- (4+2+2+2 = 10 marks)

**3.** At 0400 hrs, ship's position was ascertained as follows;

Ile de Batz brg 197 (C)

Les Sept Iles brg 141 (C)

Les Heaut de Brehat brg 114 (C)

- a) Find ship's position in Lat / Long
- b) Find the compass course to steer to pass Plateau des Roches Douvres lighthouse (Fl 5s 60m 24 M) on your stbd side so that the maximum vertical sextant angle is 22.'2
- c) At what time would you expect to raise this light.

Given;

Var as per chart 4°W (2003) 09' E / year

Dev as per Deviation Card III from SK Puri book

Own ship's speed 21 kts

Height of eye 18 m

(3+4+3 = 10 marks)

**4.** Own ship's position at 2100 hrs, Wolf Rock light bore 009 (T) x 19 M

- a) Report your position in Lat / Long.
- b) Plot the true course to pass Lizard Point Light 12 M on your port side.
- c) There is a strong Northerly wind blowing, and a current is known to be setting 111 (T) @ 4.0 kts. What will be the compass course to steer counteracting these, allowing a leeway of 4 deg.
- d) Find the ETA when Lizard Point Light will be abeam.

Given;

Var 4 W

Dev 2 E

Own vsl speed 16 kts

(2+2+4+2 = 10 marks)

**5.** You are on a laden VLCC with draught 26 m, proceeding toward Berry Head pilot station at 15 kts.

At 0100 hrs, ship's position was fixed as follows;

Anvil Point lighthouse bearing 345 (C)

St. Catherines lighthouse bearing 057 (C)

- a) Find ship's position in Lat & Long at 0100 hrs.
- b) Find the compass course to steer to proceed to the Deep Sea Pilot Station  
(Deep draught vsls) off Berry Head
- c) At 0230 hrs, Bill of Portland light was abeam at a distance of 14 M.  
Find  
CMG / SMG / Set / Rate of drift.

Given:

Var 1 W

Dev 4 E

(3+2+5 = 10 marks)

- 6.** Sailing out from Port du Havre Antifer, on a course of 299 (T), at 15 kts, At 1730 hrs Cap de le Heve lighthouse (Fl W 5s 123m 24M) bore 161 (C) with a vertical sextant angle of 17.'5.
- a) Report your position at 1730 hrs in Lat / Long
  - b) From this position, continuing on a course of 299 (T) at 15 kts, at what time & in what position would you expect the Cap de la Heve Light to dip.
  - c) At 1830 hrs, this light dipped bearing 149 (C). Find the CMG, SMG.

Given;

Own height of eye 18 m

Var 0.3 W

Dev as per Dev card III of S K Puri book

(3+3+4 = 10 marks)

### **Part- B**

- 7.** (6+3+1 = 10 marks)

- a) Define :-
  - i) Sailing vessel
  - ii) Vessel Not under command
  - iii) Vessel engaged in fishing
- b) State Rule 5 pertaining to Lookout.
- c) On which side of narrow channel should a power driven vessel keep?

- 8.** (1+1+3+4+1 = 10 marks)

- a) If two power driven vessels are crossing so as to involve risk of collision, which vessel should keep clear?
- b) What action should a vessel take if it is meeting another vessel on a reciprocal course?
- c) What action should a stand on vessel take if it finds the other vessel required to keep out of the way is not taking any action? Quote the rule under which this action is taken.
- d) In restricted visibility, with an operational radar, what should a vessel do for a target detected four points on the port bow ? Quote the appropriate rule.
- e) If two sailing vessels are having the wind on the same side, which vessel should keep out of the way?

**9.**

(3+2+3+1+1 = 10 marks)

- a) Draw the lights of a power driven vessel over 50 M in length seen from ahead.
- b) Draw the shapes to be displayed by a vessel not under command.
- c) Draw the lights of a trawler making way through water seen from ahead. What shapes would it display during daylight hours.
- d) What shape should a vessel at anchor exhibit & where?
- e) What is the fog signal of power driven vessel underway but not making way through water?

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