

**Indian Maritime University**  
**(A Central University, Govt. of India)**

**Sep/Oct'25 SE**

**Programme Name: NS**

**Semester: II**

**Subject Code: UG21T6204**

**Subject Name: BRIDGE EQUIPMENT AND COLREGS**

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Date: 04.09.2025

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

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General Instructions

- (i) All Sections (A, B & C) are to be attempted. All Questions compulsory.
- (ii) Options, if any, are specified in respective section.

**Section A**

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. The ship's course recorder
  - a. Tells the OOW how well the helmsman or autopilot is steering
  - b. Can be used as evidence in a court of law
  - c. Keeps a record of the course steered
  - d. All the above
2. The error of collimation in a sextant occurs when
  - a. Horizon glass is not parallel to the plane of the instrument
  - b. Horizon glass is not parallel to the index mirror
  - c. Telescope is not parallel to the plane of the instrument
  - d. None of the above
3. Anemometer shows the reading of
  - a. True wind direction and true speed
  - b. Relative wind direction and relative speed
  - c. True wind direction and relative speed
  - d. Relative wind direction and true speed
4. What is the full form of NAVTEX
  - a. Navigational Telecommunications
  - b. Navigational Technology
  - c. Navigational Telex
  - d. None of the above

- 5 When the pilot is on board the vessel the person in charge of the vessel is
- The Pilot
  - The Master
  - The OOW
  - Any of the above
- 6 A vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within narrow channel or fairway.
- 7 The weight of the portable battery of the daylight signaling lamp shall not exceed
- 6 kgs
  - 6.5 kgs
  - 7 kgs
  - 7.5 kgs
- 8 In an echo sounder, thin \_\_\_\_\_ plates are used to produce the acoustic pulses.
- Copper
  - Brass
  - Nickel
  - Aluminum
- 9 A pilot card is
- A card certifying that the pilot is licensed
  - A list of the vessel's essential particulars which is given to the pilot
  - A card that the pilot must sign to record his presence
  - A card given by the port authorities to the pilot
- 10 Every vessel must test the emergency steering at least once in
- 3 months
  - 4 months
  - 5 months
  - 6 months

**Section B**

**Answer all the questions ( 5x2marks = 10 marks)**

- 11 Sketch the single letter flag 'H' and state its meaning
- 12 What is error of perpendicularity in a sextant and how is it rectified?
- 13 Define Vessel Constrained by Her Draught
- 14 Define the term vessel Not Under Command.
- 15 What is the principle of operation of the electromagnetic log

**Section C**

**Answer All 5 questions (5x10marks = 50 marks).**

- 16 a. List and state the purpose the different correctors in a magnetic compass (5 marks)
- b. Draw a block diagram oof the main components of the echo sounder and state their function (5 marks)
- 17 a. Write short notes on adaptive autopilot (3 marks)
- b. What are the different control settings for the auto pilot? (7 marks)
- 18 a. List the vessels considered as 'vessel restricted in her ability to manoeuvre' (5 marks)
- b. As per rule 6 list the safe speed criteria 'by vessels fitted with operational radar' (5 marks)
- 19 a. How will you detect that the vessel is dragging her anchor (5 marks)
- b. List the entries to be made in a deck logbook related to navigation (5 marks)
- 20 Draw a diagram and state the following details for each of the navigational buoys – colour, buoy shape, top mark (if any), light colour (when fitted) and light rhythm (when fitted)
- a. South Cardinal Mark (5marks)
- b. Safe Water Mark (5 marks)

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