

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – December 2022**  
**Programme Name: B Sc (NS)**  
**Semester: Three**  
**Subject Code: UG21T5306**  
**Subject Name: Bridge Equipment & Watch keeping I**

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Date: 19.12.2022

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.
- (ii) Options, if any, are specified in respective section.
- (iii) Scientific Calculator is permitted.

**Section A**

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

1. At the commencement of a sea voyage the Master, a Pilot, the OOW and 2 ratings are present on the bridge. Who is in charge?
  - a) The Master can designate either the Pilot or the OOW to be in charge.
  - b) Either the Pilot or the Master in accordance with the owner's instructions.
  - c) Always the Master.
  - d) Always the Pilot whenever he is on board.
  
2. Should the OOW, who is escorting the pilot to the pilot ladder, be equipped with a walkie-talkie for communication with the bridge?
  - a) It's up to the pilot to decide.
  - b) Yes, but only if visibility is restricted.
  - c) It's not necessary.
  - d) Always.

*Kumar*  
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3. What is a pilot card?
  - a) A card certifying that the pilot is licensed.
  - b) A list of the vessel's essential particulars which is given to the pilot.
  - c) A card that the pilot should sign to record his presence onboard.
  - d) A card given by the Port Authorities to the pilot.
  
4. This is when the telescope is not parallel to the plane of the sextant?
  - a) Index error.
  - b) Shade error.
  - c) Error of collimation.
  - d) Side error.
  
5. In The Echo sounder thin ----- plates are used to produce the acoustic pulse which is sent from under the keel of the ship.
  - a) Copper.
  - b) Brass.
  - c) Aluminium.
  - d) Nickle.
  
6. Following entries made in deck log book by deck officer.
  - a Position of ship      b Speed of ship
  - c Details of distress signal      d All of the above
  
7. What is the full form for "NAVTEX" as per Bridge lay out is concerned.
  - a) Navigational Transmitter.
  - b) Navigational Telex.
  - c) Navigational Technology.
  - d) None of the options.
  
8. When must a proper look-out be kept?
  - a) at all times.
  - b) only between the hours of sunset and sunrise.
  - c) only when entering and leaving port
  - d) only in fog
  
9. The main duties of the lookout are
  - a) Floating objects.
  - b) Discoloured water.
  - c) Shoals.
  - d) All of the options.



10. Rudder position is shown on the bridge by the \_\_\_\_\_.

- a) Rudder angle indicator.
- b) Telemotor position.
- c) RPM Meter.
- d) Anemometer.

### Section B

#### Five Questions of 02 Marks each. SHORT ANSWER TYPE QUESTIONS

- 11. Explain in brief the Integrated Bridge System.
- 12. Describe the follow-up system of steering on a ship.
- 13. State the difference between ground reference speed and water reference speed.
- 14. Give two uses of day light signaling lamp?
- 15. Describe the procedures for changeover from manual steering to auto pilot.

### Section C

#### Answer five out of seven questions. (10 Marks Each)

- 16a. Name any 10-equipment found on ships bridge, used for Navigation and mention their use in brief.  
(05 Marks)
- 16b. Sketch and explain the principle of Sextant.  
(05 Marks)
- 17a. Describe with the help of a diagram the binnacle and arrangement of correcting devices provided in a Magnetic compass on ship.  
(05 Marks)

17b. State what steps will you take for the care & Maintenance of the Magnetic compass on board ship.  
(05 Marks)

18a. Explain the Principle of Electro-Magnetic speed log.  
(05 Marks)

18b. Identify the main components in a simple block diagram of an echo sounder and states the function of each.  
(05 Marks)

19a. Describe the operation of the course recorder log.  
(05 Marks)

19b. Describe the Electric telegraph and explain its operation.  
(05 Marks)

20a. Lists the entries which should be made in the logbook at Sea.  
(05 Marks)

20b. Describe the principles to be observed while keeping a safe navigational watch & lookout.  
(05 Marks)

21a. Explain the circumstances in which the Officer on Watch (OOW) should call the Master.  
(05 Marks)

21b. State the indications of anchor dragging on board ship.  
(05 Marks)

22a. State the Navigation duties of the OOW with Pilot embarked.  
(05 Marks)

22b. Describe the Pilot transfer arrangements, as per SOLAS, & its upkeep.  
(05 Marks)

