

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – DEC 2024
Programme Name: B Sc Nautical science
Semester: 1
Subject Code: UG21T6105
Subject Name: Ship Construction

Date: 17.12.2024

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) All the Questions are compulsory
- (iii) 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. FREEBOARD is the distance -----

- a) from the lower edge of the summer load line to the upper edge of the deck line.
- b) from the upper edge of the summer load line to the lower edge of the deck line.
- c) from the lower edge of the summer load line to the lower edge of the deck line.
- d) from the upper edge of the summer load line to the upper edge of the deck line.

2. AFTER PERPENDICULAR is-----

- a) a perpendicular drawn at the point where the aft side of the rudder post meets the winter load waterline
- b) a perpendicular drawn at the point where the aft side of the rudder post meets the tropical load waterline
- c) a perpendicular drawn at the point where the aft side of the rudder post meets the waterline
- d) a perpendicular drawn at the point where the aft side of the rudder post meets the summer load waterline

3. The lines which indicate the load line shall be – in length

- a) 25 mm
- b) 300 mm
- c) 450mm
- d) 230mm

4. Tumblehome is associated with -----

- a) Keel plate
- b) Deck Plate
- c) Side plate
- d) Accommodation structure

5. Shell expansion plan can be used to identify damaged plates

- a) True
- b) False

6. lower end of the frame may be connected to the tank top or hopper side tank by means of a flanged or edge-stiffened tank side -----

- a) bracket
- b) knees
- c) Margin plate
- d) girder

7. Each cable is fed to the appropriate chain locker compartment through port and starboard ----- pipes from the forecastle deck.

- a) hawse

- b) spurling
- c) sounding
- d) air

8 . 'solid plate floors' are fitted to

- a) strengthen the bottom transversely
- b) support the inner bottom
- c) both a and b
- d) none of these

9. Racking stress is caused due to ---

- a) Pitching
- b) Rolling
- c) Heaving
- d) Surging

10. Pounding stress is more in the --

- a) Loaded condition
- b) Partly loaded condition
- c) Ballast condition
- d) None of the above

Section B

Five Questions of 02 Marks each

11. What are the watertight doors?
12. Define air draft with a diagram?
13. What is a sheer strake?
14. What is the cleating arrangements of hatch covers?
15. Briefly explain the shearing force?

Section C

All five questions are compulsory. (5 x 10 marks = 50 marks)

16. Define the following (4x2.5 marks=10 marks)

- i) Length overall
- ii) Camber
- iii) Base line
- iv) Flare

17.

a) Draw a stbd side load line of mark of a vessel and mark all the dimensions (5 marks)

b) Define Gross tonnage and Net tonnage. (5 marks)

18.

a) Sketch and label a transversely framed double bottom tank? (5 marks)

b) What is a shell expansion plan and how are the frames numbered? (5 marks)

19.

a) Sketch and label the stern frame? (5 marks)

b) Sketch and label the forecastle mooring and anchoring arrangement? (5 marks)

20.

(a) What are the consequences of localised loading in bulk carrier? (5 marks)

(b) Describe any 10 output data provided by the loadicator. (5 marks)
