Indian Maritime University

(A Central University, Govt of India)

Supplementary Examinations – March/April 2025

Programme Name: B Sc Nautical science

Semester: 1

Subject Code: UG21T6105

Subject Name: Ship Construction

Date: 07.03.2025 Max Marks: 70

Duration: 03 Hrs Pass Marks: 35

General Instructions

(i) All Sections (A, B & C) are to be attempted.
(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. 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. A double hull tanker has ---

a) segregated ballast tank

b) Cell guide arrangement

c)Ramp arrangement

d)Both a and b

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) eductor

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

Answer all Five Questions (5 x 2 marks = 10 marks)

11. What are the watertight doors?
12. What is the importance of load line and where is the deckline marked?
13. What is a sheer strake?
14. What is the cleating arrangements of hatch covers?
15. Briefly explain the shearing force?

Section C

All the questions compulsory all carries equal marks (5 x 10 marks = 50 marks)

16.Define the following with simple picture (4 x 2.5 marks = 10 marks)

i) Camber,
ii) Rise of floor,
iii) Flare,
iv) Sheer,

17.

a) Sketch and label the loadline Marks. (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) Write short notes on ballast tank air vent head (5 marks)
(b) Sketch and mark the parts of a balanced rudder (5 marks)

20.

a) Briefly explain Panting and Pounding? Sketch and label the structure to counteract panting. (5 marks)

b) Explain Loadicator and the different output data that can be obtained from a Loadicator? Are there any approvals required for the Loadicator? (5 marks)

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