

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2026

Programme Name: DNS

Semester: II

Subject Code: UD11T6206

Subject Name: Ship Construction & Ship Stability II

Date: 08.06.2026

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.
- (iii) M.V. Hindship particulars shall be provided to the students
- (iv) Non-programmable scientific calculator is allowed

Section A

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

1. Location of International shore connection and coupling is found on
A) General arrangement plan B) Fire Fighting Appliances plan
C) Life Saving Appliances plan D) Pumping and pipe line Arrangement plan
2. _____ stress is caused due to rolling of ships
3. Beams are transverse girders which provide support to
A) Decks B) Deckhouse structures C) Bulkheads D) Vertical frames
4. The type of pump used in the fire main is _____
5. Centre of Flotation is the geometric centre of _____ of the ship.
A) Total volume B) Underwater volume C) Underwater area
D) Water plane area
6. Internal transfer of cargoes from port outside to port inside causes _____ list.

7. When vessel is pitching what will change:

A) Centre of Gravity B) Centre Buoyancy C) Metacentre D) None of these

8. The main reason for a vessel to go to angle of loll is

A) Low COG

B) High COB

C) Unstable equilibrium

D) Small displacement

9. For small angle of heel ($< 15^\circ$) GZ can be found by formula _____

10. IF $KM > KG$ then 'W x GZ' is called

A) Capsizing Moment B) Righting Lever C) Vertical Moment D) Righting Moment

Section B

Five Questions of 02 Marks each

11. Write short note on Drip tray.

12. Describe use of hatch cover and it's various types.

13. Sketch the midship transverse section of a heeled ship & explain Free surface Effect.

14. State the difference between list & heel

15. M.V. Hindship' floating at a displacement of 8420 tonnes has a free surface moment of 1542mt. find her GM (Fluid) if $KG = 7.651$ m.

Section C

Five Questions of 10 Marks each.

05 X 10 = 50 Marks

16. Draw a forecastle deck mooring arrangement of a ship and explain the uses of the following equipment on forecastle. 1. Anchor windlass, 2. Mooring winches, 3. Bollards, 4. Panama lead, 5. Oldman roller

17. Explain with suitable sketch the Pounding of the vessel and list parts of the ships that are strengthened for compensating

18. A ship of W 5000t has a tank 16m long, 10m wide and 4m deep which is empty. KM is 7.2m and KG 7.0m. Find the GM fluid if 400t of oil of RD 0.95 are received in it.

19. A ship of 15000t displacement, KG 8.7m KM 9.5m is listed 10deg to port. The following cargo work was carried out: 500t loaded KG 8.0m, 5m stbd of CL.

300t discharged, KG 4.0m, 4 port of CL. Find the quantity of SW ballast that must be transferred transversely to bring the vessel up right, the tank centres the being 12m apart.

20. M.V. Hind ship at a river port of RD 1.014 has a displacement of 10230 t, GM fluid 0.82m, FSC 0.077m. she loads 470t of cargo kg 9.8m, 150t of water ballast is run into no.1 DB tank. Find the Final GM (Fluid)

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