

Q.P. Code : 11839

[Time: 2½ Hours]

[Marks:75]

Please check whether you have got the right question paper.

- N.B: 1. Use of non-programmable scientific calculator is permitted.
2. Attempt all questions. All questions carry equal marks.

1a. A ship of 6400 tonnes displacement is floating in SW. The ship has to proceed to a dock where RD of the water is 1008. Find how much cargo must be discharged if ship is to be at same draft in the dock.

OR

1b. One bulkhead of a tank consists of a triangle apex upwards, 16m broad & 12m high. Calculate KP (height of COP above the bottom) when the sounding is 14m.

2a. On a ship of 5000 t displacement KG 4.5m and KM 5.3m, the following cargo was loaded: 2000 t, KG 3.7m & 1000 t, KG 7.5m. Find how much deck cargo (KG 9.0m) may now be loaded, if the ship is to sail with a minimum GM of 0.30m.

OR

2b. A boxed shaped vessel 120m long & 12m wide floats at an even keel draft of 6m in SW. The compartment at the forward end, 12m long & 12m broad, is empty. Find the new drafts forward and aft if this compartment gets bilged.

3a. Describe various corrections and verifications which are required to compute the freeboard of a ship.

OR

3b. Explain the safety objectives and functional requirements as per SOLAS Chapter II-2

4 Attempt any three (5 marks each)

- i) Explain Permissible Length
- ii) Explain Registered Length
- iii) Explain Standard Fire test
- iv) Explain Bulkhead Deck
- v) Explain Stern Tube
- vi) Reasons for rise in G of ship

5a. Explain Bonjean Curves & their uses in calculating, the SF & BM of a ship in still water & under wave conditions.

OR

5b. Describe how inclining experiment is conducted on a new ship. Why is it done?