

INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

MAY/JUNE 2018 END SEMESTER EXAMINATION

B.Tech (Marine Engineering)

Semester: IV

Ship Structure & Construction (UG11T1401/UG11T2401)

Date: 08-06-2018

Maximum Marks: 100

Time: 3 Hrs

Pass Marks: 50

PART – A

Marks: 10 X 3=30

(All Questions are compulsory)

1. a. Explain with diagrams what do you understand by the terms "Moulded Depth" and "Moulded Draught".
- b. Explain the following i) Freeboard and ii) Stem bar
- c. Describe "Hogging" and "Sagging"?
- d. Explain "Bulbous Bow" and its use.
- e. Explain the use of a bilge keel on a ship.
- f. Describe the advantage of a double plate rudder over a single plate rudder
- g. With respect to assigning freeboard explain "Type A" and "Type B" vessels
- h. What is dynamic positioning system?
- i. What is the difference between "Lightweight" and "Deadweight"?
- j. What are "Swash" and "Collision" Bulkheads?

PART – B

Marks: 5 X 14=70

(Answer any 5 of the following 7 Questions)

2. a. What is "Panting"? (4 Marks)
- b. Sketch and describe the arrangement at the foreend of the vessel to absorb panting and other impact loads. (10 Marks)

3. a. Compare "Cruiser Stern" and "Transom Stern" constructionally and explaining why Transom Stern is proffered over "Cruiser Stern".
(10 Marks)
- b. Draw and label a semi balanced rudder fitted to an ocean going vessel showing its attachment to the stern frame and jumping clearance.
(4 Marks)
4. a. Draw a "Plimsoll Line" explain its need with respect to safety and its location on merchant vessels.
(7 Marks)
- b. Explain "Net Tonnage" and "Gross Tonnage" of a vessel.
(7 Marks)
5. a. What is the classification process for a new construction shipbuilding?
(7 Marks)
- b. Sketch the midship section of a double bottom bulk carrier and label all parts.
(7 Marks)
6. Explain briefly the function, general layout and constructional difference between "Bulk Carrier and an "Oil Tanker".
(14 Marks)
7. a. Name at least five types of offshore support vessels and their use.
(10 Marks)
- b. What is the purpose of a cable laying ship?
(4 Marks)
8. a. How different sections of a ship are fabricated before being assembled in shipyard?
(7 Marks)
- b. What are the common weld defects in ship building and what what weld quality testing is done in shipyards?
(7 Marks)
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