

Morning.

Date: 10/12/13.

GANPAT UNIVERSITY
B.TECH SEM.III MARINE ENGINEERING
SEMESTER END EXAMINATION: DECEMBER-2013
2MR-303 SHIP STRUCTURE & CONSTRUCTION

Time-3 HOURS

Total Marks : 70

- INSTRUCTIONS: (1) Attempt all questions.
(2) Assume suitable data if necessary
(3) Figures to the right indicate full marks

Section-I

Q-1: Answer the following Questions:

(12)

- a) What are the advantages and disadvantages of Aluminium as shipbuilding material? 4
b) Draw and explain bilge and ballast piping system. 4
c) Define the following terms- (Any Two) 4
i. Cell guides and location
ii. LPG and LNG with examples
iii. Longitudinal Framing
iv. Transverse Framing

OR

Q-1: Answer the following Questions:

(12)

- a) Draw fore end construction of a ship. 4
b) Sketch a longitudinal section of a ship having 4 cargo holds and machinery space in aft. 4
c) Enlist the functions of Bulkhead in a Ship. Why a watertight door is required in a ship? 4

Q-2 Answer the following Questions: (12)

- a) Explain Harmonised System of survey and Certification? 4
- b) Describe Air and Sounding pipes in tanks. 4
- c) Describe basic concepts of Drilling Ships, Rigs, Platforms and Supply / Support Vessels. 4

OR

Q-2 Answer the following Questions: (12)

- a) Describe Registration procedure of a merchant ship. 4
- b) What is Gross Register tonnage and Net Register Tonnage of a Ship? How are they calculated? 4
- c) Explain in brief with sketch one of the following showing various strengthening members 4
 - i. Water tight Floor,
 - ii. Duct Keel,
 - iii. Tank Side Bracket,

Q-3 Answer the following Questions: (11)

- a) A ship may be regarded as non uniform beam, carrying non-uniformly distributed weights and having varying degrees of support along its length. Sketch its load distribution diagram considering weight and buoyancy. 6
- b) Explain Racking Effect by comparing it to a picture frame. 5

Section-II

Q-4: Answer the following Questions: (12)

- a) What is IACS? Why was it established? How many are members of IACS? 6
- b) Describe in brief any three (with diagram where necessary.) 6
 - i) Rudder and its types
 - ii) Types of LPG tanks
 - iii) Types of LPG vessels *b.n.v.t.*
 - iv) Different types of Launching mechanism for new build ships. *All cm. n. kha (.)*

OR

Q-4: Answer the following Questions:

(12)

- a) Describe the Role of a Classification society? How many Classification societies are functioning worldwide? 6
- b) What are the purpose of providing Deep Tank in a Ship ? Explain the construction of one of such tank with sketch. 6

Q-5 Answer the following Questions:

(12)

- a) What is purpose of heat treatment of steel? Describe any three. 4 6
- b) Explain the terms – Panting and Pounding. 4 6
- c) ~~Enlist the functions of Bulkhead in a Ship. Why a watertight door is required in a ship?~~ 4

OR

Q-5 Answer the following Questions:

(12)

- a) What are the constructional features and rule guidelines for a merchant vessel as per SOLAS ? 4
- b) How the water tightness is maintained in Hatch Covers of both wooden type and Steel Hatch Covers. 4
- c) What are conditions of validity of a class? 4

Q-6 Answer the following Questions:

(11)

- a) Sketch and Describe Midship Section of a Welded Ship showing main deck, underdeck or second deck along with other strengthening members. 5
- b) Explain in brief with sketch Watertight Bulkhead. Why the thickness of Plate increases towards the lower side of bulkhead? How bulkhead is tested? 6

END OF PAPER