

# CBCS SCHEME

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## Fourth Semester B.E. Degree Examination, June/July 2023 Ship Structure and Construction

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Describe the general classification of ships and explain how are they used. Include examples of different types of ships in each category. (10 Marks)
- b. Explain the various types of stresses that act on a ship's structure and how they are taken into account during the design process. (10 Marks)

OR

- 2 a. Discuss the various materials that are used in the constructions of ships and explain the factors that influence the selection of these materials. (10 Marks)
- b. Describe the basic types of welding and explain how they are used in ship building. Also discuss its advantages and limitations. (10 Marks)

### Module-2

- 3 a. Explain the function and design of bottom and side framing in a ship's structure. What are the factors that influence the selection of these frames? (10 Marks)
- b. Describe the different fore end arrangements that are used in ships and explain the factors that influence their selection. (10 Marks)

OR

- 4 a. Discuss the role of the anchor and cable in the ships mooring and stability and design considerations that are taken into account when choosing a particular arrangement. (10 Marks)
- b. Describe the different types of rudders and their functions. Also discuss the role of rudder in ships maneuverability. (10 Marks)

### Module-3

- 5 a. Explain the different plating systems that are used for the shells of the ship and how they play a role in the overall strength and integrity of the ship. (10 Marks)
- b. Discuss the design considerations that are taken into account when designing the midship sections of ships. (10 Marks)

OR

- 6 a. Describe the function of water tight bulkheads in a ship and explain their role in the ships safety and stability. (10 Marks)
- b. Discuss the various types of water tight doors and explain why they are suitable for these particular operations. (10 Marks)

### Module-4

- 7 a. Discuss the purpose and significance of the blismos/load line mark on a ship. Also describe the different types of load lines and their suitability. (10 Marks)
- b. Describe the purpose and importance of tonnage regulations in the shipping industry and explain how tonnage is calculated and measured. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain the layout and organization of a shipyard and describe the various facilities and systems that are used in the construction and repair of ships. (10 Marks)
- b. Describe the role of surveyors in the construction of ships and explain the various tasks and responsibilities they perform. (10 Marks)

Module-5

- 9 a. Explain the constructional details of tankers and describe the various features and systems that are used to enable them to carry liquids and gases. (10 Marks)
- b. Describe the constructional details of bulk carriers and explain the various feature and systems that enable them to carry dry bulk cargo. (10 Marks)

OR

- 10 a. Explain the causes and consequences of corrosion in ships and describe the various methods and systems that are used to control and prevent it. (10 Marks)
- b. Describe the process of surface preparation and painting in the maintenance of ships and explain the various steps and techniques that are used. (10 Marks)

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