

# CBCS SCHEME

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18MR56

## Fifth Semester B.E. Degree Examination, June/July 2023 Marine Boilers

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. With the help of a neat labeled diagram, explain the working of a smoke to be boiler. (15 Marks)  
b. Explain the longitudinal and circumferential stresses in a boiler shell. (05 Marks)

OR

- 2 a. With the help of a neat labelled diagram, explain the working of a steam to steam generator. (15 Marks)  
b. List out five differences between a smoke to be and water to be boiler. (05 Marks)

### Module-2

- 3 a. List out the boiler mountings on a water to be boiler and write a brief explanation for each mounting. (16 Marks)  
b. What are the dimensions affecting the discharge capacity of the safety V/V ? Explain briefly. (04 Marks)

OR

- 4 a. Explain the procedure and purpose for the setting of safety valve. (12 Marks)  
b. Explain the functions of a safety valve and the differences between a safety valve and a relief valve. (08 Marks)

### Module-3

- 5 a. Explain the need and objectives of boiler water treatment. (08 Marks)  
b. What are the parameters normally tested in a boiler water sample? Briefly explain each parameter. (12 Marks)

OR

- 6 a. Explain the various treatment chemicals used in boiler water treatment and why they are used? (16 Marks)  
b. List the common impurities in raw water. (04 Marks)

### Module-4

- 7 a. With the help of a neat labeled diagram, explain the working of a pressure jet burner. (15 Marks)  
b. What is combustion and explain the process of combustion of fuel in a boiler. (05 Marks)

OR

- 8 a. With the help of a neat diagram, explain the working of a rotary cup burner. (15 Marks)  
b. Explain the factors that affect combustion in a boiler. (05 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.

**Module-5**

- 9 a. Explain the steps for raising pressure with no steam available from other boilers or economizer. (15 Marks)  
b. What are the pre lighting up activities to be done for a boiler? (05 Marks)

OR

- 10 a. Explain the care of idle boiler in wet and dry layup methods. (16 Marks)  
b. What is a lighting up curve? Explain with the help of a neat diagram. (04 Marks)

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