

CBCS SCHEME

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15MR71

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019 Marine Boilers

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Discuss the functions of drums and Headers as used in water boilers. (08 Marks)
b. Sketch and describe the composite boiler suitable for producing low pressure steam for Auxiliary purpose. (08 Marks)

OR

- 2 a. Sketch and describe a two drum, bent tube boiler. Give tube sizes and show the position of the superheater. (10 Marks)
b. Explain how circulation takes place in water tube boiler between two drums. (06 Marks)

Module-2

- 3 a. Enumerate the boiler mountings fitted to a water tube boiler. State the purpose of each fitting. (08 Marks)
b. With reference to Auxiliary boiler safety valve state :
i) Why the drain must be kept clear ii) How setting is done under steam
iii) Clearance need to check
iv) Why opening gear should be kept in good working order at all times. (08 Marks)

OR

- 4 Sketch and describe an Improved high lift safety valve. (16 Marks)

Module-3

- 5 a. Give an analysis of the dissolved solid in an average sample of sea water and Fresh water which of these solids can form scale and which can cause corrosion? (08 Marks)
b. Briefly explain the some causes of boiler corrosion. (08 Marks)

OR

- 6 a. Explain the objectives of Boiler water treatment. (06 Marks)
b. Describe how you would make a quantitative test for boiler water for Alkalinity, unity, chlorinity, Hardness, phosphate, and hydrazine. (10 Marks)

Module-4

- 7 a. Describe the process by which a residual fuel oil is burnt in a boiler furnace. (08 Marks)
b. Sketch and explain boiler feed water system, specify with reason why feed water has to maintain at high temperature. (08 Marks)

OR

- 8 a. Sketch and describe a rotating cup type of fuel oil burner. (08 Marks)
b. With neat sketch, explain two element water level controllers in a marine boiler. (08 Marks)

Module-5

- 9 a. State the regulations concerning the hydraulic testing on a water tube boiler. Describe how you would carry out such test. (10 Marks)
b. What all maintenance should be carried out on easing gear? (06 Marks)

OR

- 10 a. Describe how to "blow down" and "Open up" an auxiliary boiler for inspection. Identify with reasons those parts which normally require close examination during internal inspection. (10 Marks)
b. State the procedure for laying up a boiler. (06 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.