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Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 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. Sketch and describe a scotch boiler. Indicate overall dimensions, and plate thickness. (12 Marks)
b. Sketch a Cochran Smoke tube boiler. (08 Marks)

OR

- 2 a. Write down the various differences between smoke tube and water tube boilers. (12 Marks)
b. Sketch a dual pressure boiler. (08 Marks)

Module-2

- 3 a. Sketch and describe a water level indicator suitable for boilers working in the medium pressure range. (10 Marks)
b. Explain the construction and operating principle of low and high water level alarms and stop device used for the protection of boiler in abnormal conditions, with a neat diagram. (10 Marks)

OR

- 4 Sketch and describe a consolidated safety valve. (20 Marks)

Module-3

- 5 Explain various Boiler water tests in detail. (20 Marks)

OR

- 6 a. Write a short note on total dissolved solids. (04 Marks)
b. Explain boiler corrosion in detail. (16 Marks)

Module-4

- 7 a. Explain closed feed system in detail. (10 Marks)
b. Explain three Element Boiler water control system in detail. (10 Marks)

OR

- 8 a. Describe the process by which a residual fuel oil is burnt in a boiler furnace. (10 Marks)
b. Describe a fuel oil system from the settling tanks to, but not including, the burners. (10 Marks)

Module-5

- 9 a. Briefly explain about external boiler cleaning. (05 Marks)
b. Describe a procedure for closing up, and then raising steam on a water tube boiler. (15 Marks)

OR

- 10 a. Discuss some of the common problems that can arise in the operation of Marine boilers. (10 Marks)
b. Describe the process of raising steam from cold on a scotch boiler. (10 Marks)

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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.