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## Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020 Marine Auxiliary Machines – I

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. With a neat sketch, explain main engine cooling system. (10 Marks)  
b. With a neat sketch, explain steam condensate system. (10 Marks)

OR

- 2 a. Explain with a neat sketch fuel oil system onboard vessel. (10 Marks)  
b. Explain steam hammering and water hammering in pipelines. (06 Marks)  
c. Write the color coding of pipelines. (04 Marks)

### Module-2

- 3 a. Explain working of magnetic filters with a sketch. (08 Marks)  
b. Draw a neat sketch of Gate valve and explain the maintenance of the same. (12 Marks)

OR

- 4 a. Explain the working of lip seals. (06 Marks)  
b. Draw a neat sketch of Auto Backflush Filter and explain. (14 Marks)

### Module-3

- 5 a. Explain overhauling of centrifugal pump. (10 Marks)  
b. Explain multiple screw pump with a neat sketch. List the maintenance to be performed on the same. (10 Marks)

OR

- 6 a. What is NPSH available and NPSH-Required? (06 Marks)  
b. Why priming is required for centrifugal pump? (04 Marks)  
c. Draw the characteristic curve of untrifugal pump. (04 Marks)  
d. What is cavitation? List the methods, to prevent cavitation. (06 Marks)

### Module-4

- 7 a. Explain the principle of flash evaporator. (06 Marks)  
b. Explain 4 pass shell and tube heat exchanger with a neat sketch. (14 Marks)

OR

- 8 a. Explain with a neat sketch, fuel oil heaters. (10 Marks)  
b. Explain the working of fresh water generator onboard ships, with a neat sketch. (10 Marks)

### Module-5

- 9 a. Explain hydraulic telemotor system. (10 Marks)  
b. Write the SOLAS regulations for steering gear system. (05 Marks)  
c. List the steering Gear safeties. (05 Marks)

OR

- 10 a. Explain hunting gear mechanism. (08 Marks)  
b. Explain 4-Ram steering gear system with neat sketch and list the safeties provided in it. (12 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.