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## Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020

### Marine Auxiliary Machinery – I

Time: 3 hrs.

Max. Marks: 80

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

#### Module-1

- 1 a. Explain the precautions and procedure of fuel oil bunkering onboard a vessel. (10 Marks)  
b. With a neat sketch, explain steam condensate system. (06 Marks)

OR

- 2 a. With a neat sketch, explain fuel oil transfer system. (10 Marks)  
b. Explain steam hammering and water hammering in pipelines. (06 Marks)

#### Module-2

- 3 a. With a neat sketch, explain edge type strainers. (08 Marks)  
b. Draw and label globe valve. (08 Marks)

OR

- 4 a. With a neat sketch, explain magnetic filter. (08 Marks)  
b. What is a seal? Explain lip seal in detail. (08 Marks)

#### Module-3

- 5 a. With a neat sketch, explain external gear pump. (10 Marks)  
b. Draw the characteristic curve of centrifugal pump and explain cavitations in centrifugal pump. (06 Marks)

OR

- 6 a. With a neat sketch, explain multi screw pump. (10 Marks)  
b. Why priming is needed for centrifugal pumps. (03 Marks)  
c. List the various reasons for centrifugal pump failing to take suction from a tank. (03 Marks)

#### Module-4

- 7 a. With a neat sketch, explain reverse osmosis desalination plant. (08 Marks)  
b. Draw and label 2 pass shell and tube heat exchanger. (08 Marks)

OR

- 8 a. With a neat sketch, explain fuel oil heater. (08 Marks)  
b. Explain the working of flash evaporators. (08 Marks)

#### Module-5

- 9 a. With a neat sketch, explain hydraulic telemotor system. (08 Marks)  
b. List the safeties provided in steering gear system. (08 Marks)

OR

- 10 a. Explain the principle, construction and operation of rotary vane steering gear system with a neat sketch. (12 Marks)  
b. Write the SOLAS regulations for steering gear system. (04 Marks)

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