

B.E/B. TECH. Degree Examination, December 2020  
Fourth Semester  
**MR16403-MARINE AUXILIARY MACHINERY – I**  
(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions**PART A - (8 X 2 = 16 marks)**

1. Fuel oil heater is used before the purifier centrifuge to
  - a. To increase the Density of the oil
  - b. To increase the calorific value of the fuel
  - c. To decrease the Sulphur content of HFO
  - d. To reduce the Viscosity of the fuel for better separation
2. Auto clean filters are cleaned by means of \_\_\_\_\_
  - a. Compressed Air b. Back Flushing c. Turing the Spindle d. All the above
3. \_\_\_\_\_ requires Priming for the continuous delivery of liquid.
  - a. Centrifugal pump b. gear pump c. Lobe pump d. reciprocating pump
4. Salinometer is the measuring instrument used to measure
  - a. Discharge of fresh water
  - b. Dissolved Metals in the freshwater
  - c. Impurities in the freshwater in terms of PPM
  - d. Saline content in the Freshwater
5. Name few main fittings in the Fuel oil service line.
6. Why gear pumps are not used for the ballast operation on board ship?
7. Why Plate type heat exchanger shows high efficient cooling than Shell and tube?
8. Why hunting gear mechanism is used in steering gear system?

**PART B - (4 X16 = 64 marks)**

09. (a) Explain the Necessity of Main engine freshwater Cooling systems and its operation with neat line diagram. **(16)**

**(OR)**

- (b) Explain the steps and procedure to be followed, during and after Bunkering oil on-board from bunker vessel. **(16)**
10. (a) Briefly explain the need of quick closing valve on the Ship system with Relevant neat line diagram. **(16)**

**(OR)**

- (b) Sketch and describe the construction and working of Gate valve. State the systems where it is been installed. **(16)**

11. (a) Briefly explain the construction and working of Reciprocating pump with neat diagram and why accumulator on the Reciprocating pump is necessary for the pump delivery. **(16)**

**(OR)**

- (b) Explain the working of Gear pump with neat diagram and also explain various clearances to be taken care in the gear pump to provide high discharge pressure. **(16)**

12. (a) State the Working principle behind the Fresh water generator and explain the Vacuum type evaporator with neat diagram. **(16)**

**(OR)**

- (b) Draw and explain the Four ram steering gear with hunting gear mechanism. **(16)**