INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

End Semester Examination Dec 2019/Jan 2020 B.Tech (Marine Engineering) Semester -V

UG11T1505-2505- Marine Auxiliary Machines-I

Date: 18.12.2019 Max Marks: 70
Time: 3 Hours Pass Marks: 35

<u>Part – A (compulsory)</u> Answer the following (10x2=20 Marks)

- 1. State the precautions to be taken during fuel oil Bunkering.
- 2. Why is a Relief Valve fitted on the discharge side of a Positive Displacement Pump?
- 3. Explain briefly the effect of cavitation in centrifugal pumps
- 4. What is the full form of SOPEP? Name at least five items that the SOPEP locker must have.
- 5. State the purpose of Gravity Disc in a centrifugal separator
- 6. Name FIVE Major Machinery placed in E/R bottom platform and its purposes
- 7. Name different types of filters used on board ships.
- 8. List the various stresses acting on Tail end shaft & Intermediate shaft.
- 9. What are the uses of compressed air on board a ship?
- 10. State Cleaning procedure of the Plate type Heat Exchanger?

$\frac{Part - B}{Answer any 5 out of 7 questions (5 x 10= 50 marks)}$

11.a) Describe the standard Color Codes of Pipe Lines of a Sea Going Vessel.

(3 Marks)

b) Sketch and Describe Fresh water Hydrophore system of a Sea Going Vessel.

(7 Marks)

- 12.a) Sketch & describe a fresh water generator using Main Engine jacket water as heating medium. (7 Marks)
 - b) Explain the concept of Reverse osmosis with the aid of sketch. (3 Marks)
- 13. Explain the working of a Gear pump with the help of a neat diagram.

(10 marks)

14.a) Sketch and explain the working of a two stage reciprocating air compressor.

(7 marks)

b) List the safety& trip Equipments fitted on the compressor.

(3 marks)

- 15.a) Sketch and explain the working of a two stage Oily water separator. (7 Marks)
 - b) Explain the criteria for discharge of oil or oily mixture from machinery space as per MARPOL Annex I. (3Marks)
- 16. a) Explain the working of a rotary vane Electro-Hydraulic steering gear with the help of a neat diagram. (7 Marks)
 - b) What are the Classification Society requirements for shipboard Incinerator? (3Marks)
- 17.a) Sketch & Label an Oil Lubricated Stern Tube.

(7 Marks)

b) What is the purpose of dry docking?

(3 Marks)