



M. Tech Degree IV Semester Examination in Marine Engineering, November 2008

MRE 405 MARINE AUXILIARY MACHINERY

Time : 3 Hours

Maximum Marks : 100

(All questions carry EQUAL marks)

- I. Sketch and describe a shell and tube type heat exchanger with specific mention to the factors affecting heat transfer.
- OR**
- II. With neat sketch explain plate type heat exchanger. Compare its merits and demerits with that of shell and tube type.
- III. With the aid of appropriate sketches describe the operation of self desludging heavy oil purifier.
- OR**
- IV. Write short notes on :
- (i) Gravity disc in a purifier
 - (ii) Wearing of centrifugal pump
 - (iii) Fresh water hydrophore system
 - (iv) Windlass and capston.
- V. With the aid of suitable line diagram explain the bilge system of a cargo ship indicating location of bilge wells and bilge pump and justify.
- OR**
- VI. What is MARPOL convention? Write short notes on various annexes.
- VII. Write short notes on :
- (i) Fluid film lubrication
 - (ii) Any five properties of lubricating oil
 - (iii) Lubricating oil contamination
 - (iv) Safety on compressed air system.
- OR**
- VIII. Explain the principle of fresh water generator and the method of distillate purification for drinking purpose. Why such purification is necessary?
- IX. Sketch and describe a two stage reciprocating air compressor used on board the ship. With the aid of proper diagrams show the advantage of inter cooling and after cooling.
- OR**
- X. Sketch the main sea water system on board a cargo ship, showing important valves, filters, strainers and air vents.
