

B. Tech Degree VIII Semester Examination in Marine Engineering December 2010

MRE 803 MARINE MACHINERY SYSTEM DESIGN

Time : 3 Hours

Maximum Marks : 100

- I. (a) Describe in detail the different methods used for manufacturing engineering components. (10)
(b) What are the fits and tolerances used in engineering practice? (10)
- OR**
- II. What all requirements will you consider while designing engineering components?
Explain in detail each one of them. (20)
- III. Explain in detail different types of loads acting on the crank shaft of a marine diesel engine. Based on the above, what all considerations would you apply while designing a crank shaft? (20)
- OR**
- IV. Write short notes on the following :
(i) Factors to be considered while designing a two stroke engine piston. (7)
(ii) Safety valves of a water tube boiler and their statutory requirements. (7)
(iii) Thrust bearing of a marine diesel engine and its requirements. (6)
- V. What are the different components of a propeller shafting system of a slow speed marine diesel engine using fixed pitch propeller? Show their layout by a simple sketch and describe briefly the function of each component and their design considerations. (20)
- OR**
- VI. Draw a Jacket cooling water system of a marine diesel engine, drawing all components and explain what factors are to be taken into account while designing such a system. (20)
- VII. (a) Sketch and describe the Air Starting System of a Diesel Propulsion Engine. (12)
(b) What are the statutory requirements of the above system? (8)
- OR**
- VIII. Explain in detail the requirements of an electro hydraulic steering system used on board oil tankers of one lakh dead wt. and above. (20)
- IX. What are the different factors to be considered while designing scavenge exhaust system of a Marine Diesel Engine? (20)
- OR**
- X. Describe in detail the SOLAS requirements of Fire Fighting System required on board a crude oil tanker. (20)