B. Tech Degree VIII Semester Examination in Marine Engineering, January 2010

MRE 803 MARINE MACHINERY SYSTEM DESIGN

Time : 3 Hours Maximum Marks : 100

I.		Explain in detail the basic design principles to be applied in respect of function, production methods, economics and aesthetic appeal while manufacturing engineering components.	(20)
		OR	
II.	a.	Describe in detail the different methods used for manufacturing engineering components.	(12)
	b.	What are the "fits and tolerances" used in engineering practice?	(8)
III.	a.	Explain in detail the different types of loads acting on the crank shaft of a marine diesel engine.	(12)
	b.	What are the important parameters you would consider while designing a piston of a 2 stroke diesel engine?	(8)
		OR	
IV.	a.	Describe the factors to be considered for the design of a fly wheel of an auxiliary diesel engine fitted on board a ship.	(10)
	b.	Explain the different loads a propeller shaft is subjected to and what are the measures to be considered while designing the propeller shaft.	(10)
V.		Describe in detail the factors to be considered while designing a power transmission system of a marine diesel engine.	(20)
		OR	
VI.		Draw a jacket cooling fresh water system of a marine diesel engine, showing all the components and explain what factors are to be taken into account while designing such a system.	(20)
VII.		What are the important factors you would consider while designing an electro hydraulic steering system for an oil tanker of over 1,00,000 gross tonnage.	(20)
		OR	
VIII.	a.	Explain in detail, with the help of a sketch, the lubricating oil system of a marine two stroke engine.	(10)
	b.	Describe the design parameters to be considered for the design of the above said Lubricating Oil System.	(10)
IX.		Explain in detail the different factors to be considered while designing the scavenge and exhaust systems of a marine IC engine.	(20)
		OR	
X.		Describe the SOLAS requirements for the design of a fire fighting system including emergency fire pump of a merchant cargo ship of above 3000GT.	(20)

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