B. Tech Degree IV Semester Examination in Marine Engineering July 2010

MRE 407 SHIP TECHNOLOGY

Time : 3 Hours | Maximum Marks : 100

I.	(a)	With the help of neat sketches define : aft perpendicular, forward perpendicular, length between perpendiculars, length overall and freeboard.	(10)
	(b)	Explain hogging and sagging of ship's hull. What is the nature of stresses (ie. Tension/ compression) on deck and bottom plating due to sagging and hogging.	(10)
		OR	
II.	(a)	Give the features of four types of cargo ships. Sketch an outline of section through their cargo holds.	(10)
	(b)	Sketch and explain the functions of panting stringers and panting beams.	(10)
III.	(a)	Explain single bottom and double bottom constructions. Give examples where such constructions are used. Why double bottom is mandatory in certain ship types?	(10)
	(b)	Explain longitudinal and transverse framing systems. Give examples where such systems are used.	(10)
		OR	
IV.	(a)	What are bulkheads? How do you classify them? What are the functions of transverse bulkheads? How do you decide the number of transverse bulkheads?	(10)
	(b)	Draw neat sketches of four common stiffener forms used in ships and show how they are attached to the plating. Which one is most frequently used? Why stiffening is necessary?	(10)
V.		Draw neat sketch of the midship section of a General Cargo ship showing all structural elements and major cut outs.	(20)
		OR	
VI.		Draw neat sketch of the midship section of a bulk carrier showing all structural elements and major cut outs.	(20)
VII.		Draw necessary sketches of the forward region of the ship and indicate the following : collision bulkhead, forecastle deck, bulbous bow, hause pipe, chain locker, plate stem, breast hook, panting stringer, windlass and anchor.	(20)
		OR	
VIII.		Draw necessary sketches of the aft region of the ship and indicate the following : stern frame, rudder trunk, aft peak bulkhead, stern tube, propeller, rudder, steering flat, rudder stock, rudder carrier, stuffing box.	(20)
IX.	(a)	What is tonnage? How do you measure tonnage? What is the use of knowing tonnage of a ship?	(10)
	(b)	If you are asked to find a suitable location for a shipyard how would you go about it ?	(10)
		OR	
X.	(a)	List out all centres of activity in a shipyard and explain their functions.	(10)
	(b)	If you are asked to design the layout of a shipyard how would you arrange various centres of activity ideally and why?	(10)

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