BT – MRE – VI – 06.13 – 0627

B. Tech. Degree VI Semester Examination in Marine Engineering June 2013

MRE 604 MARINE INTERNAL COMBUSTION ENGINES II

Time : 3 Hours Maximum Marks : 100

I.	(a)	Sketch and describe an indicator instrument and explain how indicator diagrams are taken.	(14)
	(b)	Explain the following terms: (i) Draw cards (ii) Out of phase diagram (iii) Light spring diagram	(6)
		OR	
II.		Sketch and describe a starting and reversing system of a large 2 stroke marine diesel engine. Explain the safety features provided in the system.	(20)
III.		Sketch and describe the working principle and operation of a hydraulic governor and explain the terms hunting gear and speed droop.	(20)
		OR	
IV.		What is meant by intelligent engine? What are the advantages these engines have over the conventional engines?	(20)
V.		What are the causes of crankshaft misalignment? Describe the method of checking crankshaft alignment and how readings are recorded.	(20)
		OR	
VI.	(a)	Why crosshead bearings are considered difficult to lubricate? What are the remedial measures adopted?	(10)
	(b)	Explain what are the inspections carried out during overhauling of an engine to decide the condition of (i) Piston rings (ii) Cylinder liner	(10)
VII.		Sketch and describe a rotary type of air compressor and compare the same with reciprocating compressor for starting air duties of main engine. Why intercoolers are provided in compressors?	(20)
		OR	
VIII.		Explain with a neat sketch the construction and design features and working of a gas turbine plant.	(20)
IX.		Sketch and describe a free piston engine gasifier and conventional air steam combustion chamber.	(20)
		OR	
X.	(a)	Explain Joule-Brayton cycle gas turbine plant.	(8)
	(b)	Explain the different methods adopted for improvement of thermal efficiency of gas turbine plants.	(12)

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