

CRASH COURSE

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10MR53

Fifth Semester B.E. Degree Examination, May 2017 Marine Internal Combustion Engine – I

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Write comparative study of slow speed, medium speed and high speed engine. (15 Marks)
b. Draw the PV diagram and port timing diagram of 2 stroke marine diesel engine. Explain the process taking place as per port timing diagram. (05 Marks)
- 2 With neat sketch, write a note on following parts of engine:
 - a. Connecting rod
 - b. Jackets and lines
 - c. Pistons
 - d. Hydraulic exhaust valve (20 Marks)
- 3 a. Briefly explain any three types of air charging methods in two stroke engine. (10 Marks)
b. Explain with neat sketch uniflow, loop and cross loop scavenging. (10 Marks)
- 4 a. Explain the types of turbochargers used in marine engines. (10 Marks)
b. With neat sketch, explain two stage turbo charges. (05 Marks)
c. With a note on uncooled turbochargers with necessary graph. (05 Marks)

PART – B

- 5 a. Write notes on:
 - i) Fuel atomization
 - ii) Ignition delay
 - iii) After burning (10 Marks)
b. Draw a neat labeled sketch of fuel injector used in four stroke engine and explain the working of the same. (10 Marks)
- 6 a. Explain ten properties of L.O. used in main engine. (10 Marks)
b. Explain main air starting system in two stroke engine with neat sketch. (10 Marks)
- 7 List the causes, indication, actions and prevention of the following:
 - i) Scavenge fire
 - ii) Crankcase explosion (20 Marks)
- 8 a. Explain development of long stroke engines. (10 Marks)
b. Explain the implication of stroke-bore ratio. (10 Marks)

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