

GANPAT UNIVERSITY

B. Tech. Semester-V: Marine Engineering

Regular Examination Nov – Dec 20152MR507 Marine Internal Combustion Engine I

Time: 3 Hours

Total Marks: 70

- Instruction: 1. Attempt all questions
2. Assume suitable data if necessary
3. Figures to the right indicate full marks

Section - I

Que. – 1 Sketch & Explain valve timing diagram for 4 Stroke & 2 Stroke Engines. (12)

OR

Que. – 1 Attempt the Following:

- a. How conditions deviate in actual engines than in theoretical cycles. (6)
b. What are the special features incorporated in Exhaust valves of Medium Speed Engines to prolong their life and minimize maintenance? (6)

Que. – 2 Describe with sketch fuel valve of a marine diesel engine? Why nozzles are cooled? What are fuel injector faults? (11)

OR

Que. – 2 Draw and explain hydraulic exhaust valve of a 2-Stroke marine diesel engine. (11)

Que. – 3 Attempt the Following:

- a. What are the advantages of ME-C range of MAN B&W Engines (6)
b. What are the special features incorporated in Tribo Pack Technology in latest Wartsila Engines. (6)

Section – II

Que. – 4 Describe the followings: (Any three) (12)

- a) Dissociation effect
b) Microbial degradation of Fuel Oil
c) Basic requirements of Combustion chamber
d) Factors affecting fuel combustion

OR

Que. – 4 Draw and Explain the Piston of a 2- Stroke engine. Why grooves are chrome plated? What are functions of piston rings? What will be effects of running the engine with excessive clearances? (12)

Que. – 5 What is NO_x and SO_x? Describe methods to reduce NO_x and SO_x emission from ship. (11)

OR

Que. – 5 Explain various properties of fuel oils used in marine engines. (11)

Que. – 6 Describe the principle construction features of a turbocharger with a sketch. How blower and turbine side of a turbocharger is cleaned during operation of a diesel engine? (12)

END OF PAPER