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10MR53

Fifth Semester B.E. Degree Examination, June/July 2018
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. Define : (i) Break power (ii) Indicated power (iii) Mean effective pressure
(iv) Volumetric efficiency (v) Air-fuel ratio. (10 Marks)
- b. Write the difference between 2-stroke and 4-stroke engines. (10 Marks)
- 2 a. Write a note on :
(i) Cylinder head components
(ii) Bed plates and A-frames
- b. Explain oil cooled piston with neat sketch. (10 Marks)
- 3 a. Explain briefly types of scavenging process. (10 Marks)
- b. Define : (i) Air charge ratio
(ii) Natural aspiration
(iii) Super charging
(iv) Under piston scavenging (10 Marks)
- 4 a. Explain pulse type turbocharging with diagrams and write its merits and demerits. (10 Marks)
- b. What are the problems occur in turbocharger and explain in detail. (10 Marks)

PART - B

- 5 a. Define : (i) Ignition delay
(ii) After burning
(iii) Atomization
(iv) SO_x and NO_x in exhaust (08 Marks)
- b. Draw the fuel injector and label its parts. (08 Marks)
- c. List all and explain any two fuel oil properties. (04 Marks)
- 6 a. Describe briefly the flow of jacket cooling water of main engine with simple line diagram. (10 Marks)
- b. Explain cooling water treatment in detail. (10 Marks)
- 7 a. What is crank case explosion? State its causes and prevention methods. (12 Marks)
- b. Draw starting air line diagram. (08 Marks)
- 8 a. Explain developments in turbo charges. (10 Marks)
- b. Explain difference between two stroke and four stroke piston. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Value of marks for each question is given in the margin. 3. Questions which are marked with * will be treated as malpractice.