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10MR61

Sixth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Marine Internal Combustion Engine – II

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Write a note on different types of vibrations acting on main engine? Also state the measures to counter vibration. (10 Marks)
- b. What is balancing of an engine? What will be the effect of an unbalanced engine? (10 Marks)
- 2 Draw and explain starting air system. (20 Marks)
- 3 What is an indicator diagram? List its significance. Draw the diagrams for following 4 faults and explain their causes, indications and effects.
i) Early ignition.
ii) Late Ignition
iii) After Burning
iv) Leaky fuel injector. (20 Marks)
- 4 a. Explain following lube oil additives in detail:
i) Detergents
ii) Dispersants
iii) Antioxidants
iv) Antifoam additives (12 Marks)
- b. Explain the reasons for liner wear. (08 Marks)

PART – B

- 5 a. Write a short note on heat exchangers? Draw the following:
i) Shell and tube type heat exchanger. (12 Marks)
- ii) Plate type heat exchanger. (08 Marks)
- b. Write a note on free piston engine gasifiers. (08 Marks)
- 6 a. What are the checks to be carried out to test alarms? (Daily, Monthly and Annually). (06 Marks)
- b. Explain the concept of intelligent engine and its goals. (14 Marks)
- 7 a. Write the procedure for liner removal. (14 Marks)
- b. Write the checks to be carried out on piston rings during maintenance. (06 Marks)
- 8 a. What are the main goals of intelligent engines? (08 Marks)
- b. Write the Marpol Annex 6 regulations for control of NO_x.
i) Tier I
ii) Tier II
iii) Tier III (12 Marks)

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Important Note: i. On completing your answers, immediately draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.