

# CBCS SCHEME

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17MR52

## Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020 Marine Internal Combustion Engine – I

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Explain the classification of I.C engines. (12 Marks)  
b. Explain mean piston speed and its limitations. (08 Marks)

OR

- 2 a. Explain valve timing diagram of 2 stroke engine with neat sketch. (10 Marks)  
b. Draw and explain otto cycle, diesel cycle in PV and TS diagram. (10 Marks)

### Module-2

- 3 a. Explain with a neat sketch of types of crankshaft. (10 Marks)  
b. Write the material composition and in cylinder liner and draw a neat sketch of 2 stroke liner. (10 Marks)

OR

- 4 a. Explain the propose of bearing. Write down the faults and defects caused by bearing. (13 Marks)  
b. Explain valve timing diagram of 2 stroke engine with neat sketch. (07 Marks)

### Module-3

- 5 a. Define scavenging. Explain various type of scavenging with neat sketch. (10 Marks)  
b. Explain the procedure for: i) Grid washing ii) Steam/water in turbo charger. (10 Marks)

OR

- 6 a. Sketch and explain constant type turbo charger. (10 Marks)  
b. Write down the faults and failure in turbo charger. (10 Marks)

### Module-4

- 7 a. What is starting air line explosion? What are its indication, safeties and prevention? (10 Marks)  
b. Explain compression pressure ratio and its effect on engines. (10 Marks)

OR

- 8 a. What is scavenging fire, what are its cause, indication, action and prevention? (10 Marks)  
b. Explain any 5 fuel oil properties. (10 Marks)

### Module-5

- 9 a. Explain the types of lubrication. (10 Marks)  
b. Why lubrication oil test is done. Write the onboard LO test with the range for trunk engine. (10 Marks)

OR

- 10 a. What is microbial degradation of oil? What is the indication, prevention of this? (10 Marks)  
b. Sketch and explain constant type turbo charger.. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily 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.