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

Time: 3 hrs.

Max. Marks:100

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

**PART – A**

- 1 a. Draw and explain 2 stroke port timing and 4-stroke valve timing diagrams. (10 Marks)
- b. Define:
  - i) Mean effective pressure
  - ii) Brake power
  - iii) Indicated power
  - iv) Mechanical efficiency
  - v) Maximum continuous rating. (10 Marks)
- 2 a. Write down the difference between 2 stroke and 4-stroke engine. (10 Marks)
- b. With neat sketch, explain hydraulic exhaust valve. (10 Marks)
- 3 a. Explain briefly types of Scavenging. (10 Marks)
- b. Give short notes on gas exchange process. (10 Marks)
- 4 a. Sketch and explain constant pressure turbocharger. (10 Marks)
- b. Sketch and explain pulse turbocharger. (10 Marks)

**PART – B**

- 5 a. Explain any six fuel oil properties. (10 Marks)
- b. Explain fuel injection with a neat sketch. (10 Marks)
- 6 a. Give short notes on types of lubrication. (10 Marks)
- b. Explain any six lubricating oil pressure. (10 Marks)
- 7 a. What is crank case explosions? Explain the condition for the same. (10 Marks)
- b. What is scavenge fire and causes, indication of prevention? (10 Marks)
- 8 a. Explain difference between two strokes and four stroke piston. (10 Marks)
- b. Explain variable exhaust closing operations. (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.