

# Indian Maritime University

( A Central University, Govt of India)

May-June 2018 End Semester Examinations

## B. Tech (Marine Engineering)

Semester-VI

### Marine Internal Combustion Engine II (UG11T2602/1602)

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Date: 11.06.2018

Max Marks:100 Marks

Time: 3 Hrs

Pass Marks: 50 Marks

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#### PART – A

Marks: 10 x 3 =30

(All Questions are compulsory)

1. a. Write short notes on Variable Injection Timing (VIT)
- b. What is effective stroke of a fuel pump
- c. Explain the principle function of a starting air distributor
- d. List the safety provisions in a marine diesel engine air starting system
- e. What is the use of marine diesel engine lubricating oil analysis report?
- f. What are the properties required for the L.O used in a trunk piston four stroke marine diesel engine
- g. What is an Intelligent Engine?
- h. What are effects of poor quality residual Fuel oil on Marine Diesel Engine?
- i. What is the function of governors? Also mention the types of governors
- j. What is the use of Tie Rods?

#### Part – B

Marks: 5 x 14 =70

(Answer any 5 of the following 7 Questions)

2. (a) Sketch and explain the working of a jerk type fuel pump  
(10 Marks)
- (b) What is electronic fuel injection system  
(4 Marks)
3. (a) Sketch & Explain starting air system of a long stroke 2 cycle large marine diesel engine  
(8 Marks)

- (b) Explain the reversing mechanism fitted in the engine mentioned above (6 Marks)
4. (a) Sketch and describe the four types of indicator diagrams (10 Marks)
- (b) What are the faults that can be identified by indicator diagrams? (4 Marks)
5. (a) Sketch and describe the lubricating oil system of a slow speed long stroke 2 cycle large marine diesel engine with turbocharger (10 Marks)
- (b) Explain the concept of reduction gear used for medium speed engines (4 Marks)
6. (a) Draw and explain the working of a hydraulic governor (10 Marks)
- (b) Explain the minimum requirement of automation for UMS operation of ships (4 Marks)
7. (a) What are the reasons for cylinder liner wear and explain how it can be minimised (8 Marks)
- (b) Explain how cylinder liner wear is measured or gauged (6 Marks)
8. (a) Explain the reasons/causes for piston ring failure (8 Marks)
- (b) Explain microbial degradation of fuel & lub oil (6 Marks)