

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)  
**END SEMESTER EXAMINATION June-July 2019**  
**B.Tech (Marine Engineering)**  
**Semester: V**

**Marine Internal Combustion Engine -I (UG11T2503)**

**Date: 15-07-2019**

**Maximum Marks: 100**

**Time: 3 Hrs**

**Pass Marks: 50**

**PART – A**

**(10x3= 30 Marks)**

**(All Questions are compulsory)**

- 1.(a) What do you mean by Stroke of Diesel Engine, explain 2-stroke & 4-Stroke. (3)
- (b) Explain valve timing diagram of 4-stroke engine. (3)
- (c) Explain "Tie rods "of a Diesel Engine. (3)
- (d) Explain various types of scavenging in 2-strokes engines. (3)
- (e) Explain the function of fuel injectors in marine diesel engine. (3)
- (f) How SO<sub>x</sub> Can be controlled in exhaust emission? (3)
- (g) Explain bore cooling of liners. (3)
- (h) Why oil is preferred for piston cooling in modern engines? (3)
- (i) What is the advantage of increased stroke bore ratio? (3)
- (j) Explain the advantages of long-stroke engines. (3)

**PART – B**

**(5x14 = 70 Marks)**

**(Answer any 5 of the following)**

2. **Write short notes on the following:** (7+7)

(a) Slow speed Diesel Engine

(b) Medium speed Diesel Engine

3. Sketch & describe a bore cooled (oil cooled) piston fitted with spray nozzles. (14)

4. Explain at least seven features of below mentioned engines: (7+7)

(a) Sulzer RTA Engines

(b) MAN-B&W SMC Engines

**5. Write short notes on**

(a) Main Bearing & Cross head Bearing of a slow speed diesel Engine (7)

(b) Maintenance of coolant & cooling system on board ship. (7)

**6. Explain the following:-**

(a) Constant pressure turbocharging (7)

(b) Pulse turbocharging. (7)

**7. Explain the following:-**

(a) Ignition Delay & After Burning (7)

(b) Design aspects of combustion chamber (7)

**8. Describe the following:-**

(a) Crankcase Inspection after scavenge fire (7)

(b) Starting air line Explosion (7)