

INDIAN MARITIME UNIVERSITY
Time Bound Assignment
B.Tech (Marine Engineering) Arrear Examinations
September/October 2020
Semester VI
Marine Internal Combustion Engine II
(UG11T1602 / UG11T2602)

Date: 22-09-2020
Time: 3 Hours

Max Marks: 70
Pass Marks: 35

Part – A (compulsory)
Answer the following (10x2=20 Marks)

1. How are ship's officers made aware of the barred speed range of an engine where a barred speed exists? (2)
2. List out safety interlocks in starting air system on a large two stroke engine. (2)
3. Reasons for variation of peak pressure in a diesel engine. (2)
4. What is the function of heat exchanger in cooling system of Marine Diesel Engine? (2)
5. Why is it difficult to lubricate the cross-head bearing of a 2-stroke engine but not difficult in the case of the gudgeon pin in a 4-stroke engine? (2)
6. Name some of the safety cut outs and alarms normally provided on the Medium speed auxiliary engine. (2)
7. Why hydraulic servo governors are widely used? (2)
8. Describe the function of piston rings in a diesel engine. (2)
9. State precautions you will take before entering the crank case. (2)
10. What is IAPP certificate? (2)

Part – B

Answer any 5 out of 7 questions (5 x 10= 50 marks)

11. (a) Vibration is noticed from an engine, which has previously been Operating in a stable condition. Explain: The possible reasons for such vibrations. (6)
- (b) Explain the cause and effect of torsional vibration. (4)

- 12 (a) With reference to a slow speed 2 stroke crosshead type main engine State with reasons faults might be found during piston overhauling. (5)
- (b) In Main Engine ancillary equipment for viscosity, explain operation of Viscostherm fitted in fuel oil system. (5)
- 13 (a) Describe the method of checking and adjusting timings of port Controlled Fuel pump. (6)
- (b) Bridge indicator panel for engine room machineries have minimum possible alarms and instrumentations sufficient enough to warn the watch keeper. List these alarms and instrumentations. (4)
14. (a) Explain how Indicator cards (Power card) taken and how to calculate power through the power card of one unit of the engine. (5)
- (b) With reference to cylinder lubrication and liner wear, explain how Scuffing and Clover leafing may be caused and prevented. (5)
15. (a) Describe an over-speed trip device with fail safe arrangement Suitable for a medium speed engine. (5)
- (b) Describe the action that takes place in the fuel pump, piping and injection valves just prior to and during injection of fuel. (5)
- 16 (a) Describe with the aid of sketch, a mechanical speed sensing governor with hydraulic control. (6)
- (b) State why it is desirable to install a hydraulic governor rather than a mechanical one. (4)
17. (a) Draw a schematic (block) diagram showing the concept of an intelligent engine . (6)
- (b) What is NOx Technical File? (4)

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