

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – June 2023**  
**Programme Name: B Tech (ME)**  
**Semester: VII**  
**Subject Code: UG11T3705**  
**Subject Name: ENGINE ROOM MANAGEMENT**

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Date: 17.05.2023

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

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General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.

***QP setters to specify the following as applicable:-***

- (iii) Tables (Steam/Log/Nautical Almanac etc) that can be used.
- (iv) Chart Work Booklets to be used.

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. What are the components that influence engine room personnel and their work environment.
  - a) situational awareness
  - b) Fatigue
  - c) Communication
  - d) All of the above
2. The importance of Engineer performs pre-lubrication with cylinder oil during preparation of Main Engine is
  - a) Increase the power output
  - b) To easy-up the piston and cylinder
  - c) To avoid the corrosion
  - d) None of the above
3. As per SOLAS, location of an emergency fire pump will be
  - a). Along with engine room
  - b). Separate than engine room
  - c). In the cargo pump room
  - d). None of these

4. What do you understand by the term "tappet clearance" with respect to a Four stroke diesel engines?
- (a) The clearance between rocker arm and push rod
  - (b) The clearance between valve spindle and valve seat
  - (c) The clearance between rocker arm and valve spindle
  - (d) The clearance between rocker arm and valve seat
5. Select the correct option, if you find your reliever of the engineering watch is in drunken state.
- a). You will ask and if he is OK to take over the watch, you can hand over
  - b). You will deny to hand over the watch, and inform to your senior about the same.
  - c). You will enter the case in the engine room Log Book, you can hand over the watch.
  - d). You will hand over the watch.
6. Obtaining a Bunker Delivery Note (BDN) and retaining of MARPOL bunker samples onboard are a requirement as per
- (a) MARPOL ANNEX 1
  - (b) MARPOL ANNEX 6
  - (c) MARPOL ANNEX 3
  - (d) MARPOL ANNEX 5
7. Which of the following is NOT a SOPEP equipment found in the SOPEP locker, to be kept ready prior to bunkering onboard ships:-
- a). Wilden Pump
  - b). Oil absorbent Pads
  - c). Fire Extinguisher
  - d). Rubber Squeegee
8. Hydraulic cranes must be properly warmed-up before being Operated because –
- a) Warm-up allows the hydraulic system to become charged with oil
  - b) Warm-up allows the relief valves to be properly tested
  - c) Hydraulic strainers operate only during the warm-up period
  - d) Hydraulic fluid must be at the proper viscosity
9. Dead front Panel means
- a) Glass separation between control room and engine room
  - b) Safety device provided in MSB
  - c) Glass window in bridge
  - d) None of the above
10. For a RISK ASSESSMENT MATRIX to be formed, the following two factors have to be taken into consideration:-
- a). Probability & Impact
  - b). Likelihood & Severity
  - c). Likelihood & Impact

d). All the above

### Section B

Five Questions of 02 Marks each (5 x 2 =10)

11. Name three communication system available on board for shipboard usage and briefly explain their purpose?
12. Write a short note on Emission Control Areas and its latest requirements.
13. During sea watch you observed that the engine room bilge level is high. How will you manage to lower the bilges in compliance with the requirements?
14. Discuss the significance of "daily consumptions" on board ships.
15. List out the various types of sealants and packing.

### Section C

Seven Questions of 10 Marks each of which any 05 questions to be answered.

16. (a) Discuss how the Main Engine and Steering Gear are prepared for sailing from a certain port, with all the relevant Bridge notices being obtained.  
(b) Explain the conditions under which Oily Mixtures may be discharged into the sea from a ship's Engine Room Bilge wells; as per MARPOL Annex 1. (7 + 3)
17. (a) Describe the actions to be taken in case the turbocharger of your Main Engine is damaged and there are no spare parts onboard for carrying out the necessary repairs.  
b) Distinguish between the JIT (Just In Time) & ABC Analysis inventory techniques. (6+4)
18. (a) Discuss various emergency conditions in the Engine Room.  
  
(b) Describe briefly the Human Factor of an engine room resource management. How it can be made more effective? (5+5)
19. (a) Briefly describe the handing over and taking over watch procedures on a cargo ship at sea.  
  
(b) What are the safety precautions to be taken before, during and after bunkering of residual fuel oil on a merchant vessel. (5+5)
- 20 (a) Write short notes on BWM and Antifouling convention?  
  
(b) Explain Planning, entering, docking and inspection with respect to Dry Dock. (5+5)

- 21 (a) State advantage and disadvantages of 'Planned maintenance' and 'condition based maintenance'.
- (b) Explain the windlass operation on board.(5+5)
22. (a) Explain in detail about MARPOL ANNEX 5 and requirements of the Garbage Management Plan onboard merchant vessels.
- (b) What instructions will you give to a junior engineer before he enters an enclosed space for some repairs. (7 + 3)