

Reg. No.

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B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Third Semester

MR22303 – SEAMANSHIP, ELEMENTARY NAVIGATION AND SURVIVAL AT SEA*(Marine Engineering)***(Regulation 2022)****TIME: 3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	The students should be able to understand the ship board organization of personnel and their duties	3
CO 2	The students should be able to comprehend knowledge on Anchor, Mooring winches and windlass and their operations	3
CO 3	The students should be able to understand elementary navigational techniques	3
CO 4	The students should be able to gain knowledge of survival equipment and skills for survival at sea	3
CO 5	The students should be able to understand the duties and responsibilities of engine room personnel and their actions on emergency situations in engine room	3

PART- A (20 x 2 = 40 Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Which part of the merchant ship is known as monkey island and give the reason for giving that name to it.	1	3
2. Name the various navigational lights used in a merchant naval ship.	1	2
3. Why a look out post is considered as an important watch keeping duty?	1	3
4. What do you understand by the term flag etiquette?	1	2
5. How an anchor can be disconnected in case it got struck to sea bed?	2	3
6. Name the various parts of an admiralty anchor.	2	2
7. How does the anchor holding capacity vary with different sea bed conditions?	2	3
8. What do you understand by the term “walk out an anchor”?	2	2
9. How does an echo sounder measure the depth below keel?	3	3
10. How do we find our position in the middle of the sea?	3	3
11. Name the various navigational instruments used in the navigational bridge?	3	3
12. What is the working principle of Radar?	3	2
13. Differentiate between life boat and rescue boat.	4	3
14. Enumerate various Pyrotechnics used in life boat.	4	3
15. How does the life raft get released when a ship is sinking?	4	3
16. List out the challenges for survival at sea.	4	2

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|-----|--|---|---|
| 17. | Where will you assemble in case of an emergency alarm? | 5 | 3 |
| 18. | List out the various emergencies you may predict in the engine room. | 5 | 2 |
| 19. | Where will you find the emergency escape and where is it opened to? | 5 | 3 |
| 20. | Where will you find the emergency bilge suction valve and what is the purpose of it? | 5 | 3 |

PART- B (5 x 10 = 50 Marks)

- | | | Marks | CO | RBT
LEVEL |
|-------------|--|-------|----|--------------|
| 21. (a) | Discuss in detail the watch keeping system with timings for navigating and engineering officers along with justification for the particular officer allotted for that watch. | (10) | 1 | 3 |
| (OR) | | | | |
| (b) | Draw a neat sketch of the side and top view of a ship and mark the following: forecastle, windlass, mooring winches, poop deck, navigational bridge, accommodation, anchor, main, forward and aft masts. | (10) | 1 | 3 |
| 22. (a) | (i) Discuss in detail about the lowering and heaving of anchor. | (6) | 2 | 3 |
| | (ii) Enumerate the safety hazards associated with these operations. | (4) | 2 | 2 |
| (OR) | | | | |
| (b) | (i) Draw the layout anchor and anchor chain handling equipment showing the bitter end releasing arrangement inside the chain locker. | (6) | 2 | 3 |
| | (ii) Explain the purpose of bitter end releasing arrangement. | (4) | 2 | 2 |
| 23. (a) | Explain in detail about the voyage data recorder. Narrate in detail about various information that can be stored in it. | (10) | 3 | 3 |
| (OR) | | | | |
| (b) | Discuss in detail about the satellite navigation and various instruments used for the same. | (10) | 3 | 3 |
| 24. (a) | Discuss in detail about the actions to be taken before boarding, immediately after boarding and when inside the life raft after you have abandoned the ship. | (10) | 4 | 3 |
| (OR) | | | | |
| (b) | Discuss in detail about the following: drinks of death, hypothermia, hyperthermia and frost bite. | (10) | 4 | 3 |

25. (a) Discuss the duties and responsibilities of marine engineering officers holding a valid certificate of competency. **(10) 5 3**

(OR)

(b) Discuss in detail about the arrangement to pump out a flooded engine room using emergency fire pump. **(10) 5 3**

PART- C (1 x 10 = 10 Marks)

(Q.No.26 is compulsory)

	Marks	CO	RBT LEVEL
26. Prioritize the various survival techniques to be followed when you are in a life raft.	(10)	4	5
