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***B.Tech. Degree IV Semester Regular/Supplementary Examination in
Marine Engineering June 2024***

**19-208-0406 SEAMANSHIP AND NAVIGATION
(2019 Scheme)**

Time: 3 Hours

Maximum Marks: 60

Course Outcome

On successful completion of the course, the students will be able to:

- CO1: Understand the nautical terms deck equipments and the navigational light.
 CO2: Familiarize rope knots and mooring and dropping anchor.
 CO3: Gain basic knowledge about navigation.
 CO4: Know about life boat, life raft and abandoning ship.
 CO5: Understand the survival of life at sea and marine pollution control.
 Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 – Analyze,
 L5 – Evaluate, L6 – Create
 PI – Programme Indicators

(Answer *ALL* questions)

(5 × 15 = 75)

		Marks	BL	CO	PI
I.	(a) What is the name of the topmost deck on a ship and name the important fittings on this deck?	5	L1	1	1.4.1
	(b) Briefly describe the organization of the engine department on board a merchant vessel specifying the duties of the engineers and ratings.	10	L2	1	1.4.1
OR					
II.	(a) What are the responsibilities of Second Engineer on board.	5	L1	1	1.4.1
	(b) Sketch and describe the horizontal screening of navigational lights on a power driven vessel of less than 50 meters.	10	L2	1	1.4.1
III.	(a) Describe two visual means of signaling.	5	L2	2	1.4.1
	(b) (i) With a neat diagram label the various parts of a stockless anchor.	5	L2	2	1.4.1
	(ii) What are the duties of the officer on watch while the ship is at anchor?	3	L2	2	1.4.1
	(iii) Explain any two reasons for anchoring?	2	L2	2	1.4.1
OR					
IV.	(a) Briefly describe with suitable sketches at least five of the various knots and hitches.	10	L2	2	1.4.1
	(b) What factors should be taken into consideration when proceeding for anchoring?	5	L2	2	1.4.1
V.	(a) Describe the use and working principal of a doppler speed log with a diagram, name the errors found during it's use and their causes.	8	L2	3	5.1.1
	(b) What principle is used for range and bearing determination in a radar?	7	L2	3	5.1.1

OR

(P.T.O.)

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		Marks	BL	CO	PI
VI.	Briefly explain the working principle of the following: (i) Echo sounder. (ii) Gyro compass. (ii) Sextant.	15	L2	3	5.1.1
VII.	Explain the functioning of the following equipment with suitable sketches. (i) Rocket Parachute Flare. (ii) Hand Flare. (iii) Rescue Boat.	15	L2	4	5.1.1
OR					
VIII.	(a) With a neat diagram explain the use of a sea anchor.	6	L2	4	1.4.1
	(b) What are the markings found in a lifeboat? Explain procedure for lowering an inflatable life raft.	9	L2	4	1.4.1
IX.	What is Marpol 73/78? List the various annexes and their dates of enforcement? What are the criteria for discharge of oil from cargo spaces from a tanker under Marpol 73/78 Annex 1?	15	L3	5	4.1.1
OR					
X.	What will be your actions upon having an oil spill while receiving bunker? What are the emission control measures in place as per Annex 6 of Marpol 73/78 and the latest amendments?	15	L3	5	4.1.1

Bloom's Taxonomy Levels
L1-7%, L2-73%, L3-20%.
