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***B.Tech. Degree IV Semester Regular/Supplementary Examination in
Marine Engineering June 2023***

**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
 PO – Programme Indicators

(Answer *ALL* questions)

(5 × 15 = 75)

		Marks	BL	CO	PI
I.	(a) Name the important equipment and fittings on the forecastle deck of a ship.	5	L1	1	1.4.1
	(b) Briefly describe the duties of the officers and ratings in the engine department.	10	L2	1	1.4.1
OR					
II.	(a) What are the responsibilities of Chief Engineer on board.	5	L1	1	1.4.1
	(b) Sketch and describe the horizontal screening of side lights and stem light on a power driven vessel.	10	L2	1	1.4.1
III.	(a) Describe two visual means of signaling.	5	L2	2	1.4.1
	(b) (i) Sketch a vessel moored at berth showing all mooring lines and their names	5	L2	2	1.4.1
	(ii) What is the use of mooring winches?	3	L2	2	1.4.1
	(iii) What is a rat guard and where is it used?	2	L2	2	1.4.1
OR					
IV.	(a) Briefly describe with suitable sketches at least 5 of the various knots, hitches and bends	10	L2	2	1.4.1
	(b) What are the factors taken into consideration by Master(Captain), while proceeding for anchoring at a place?	5	L2	2	1.4.1
V.	Briefly explain the working principal of the following equipment with suitable sketches wherever applicable:	15	L2	3	5.1.1
	(i) Voyage Data recorder		L2	3	5.1.1
	(ii) Gyro compass				
	(iii) EPIRB				

OR**(P.T.O.)**

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		Marks	BL	CO	PI
VI.	Briefly explain the working principle of the following: (i) Doppler speed log. (ii) Echo sounder. (iii) Gyro compass.	15	L2	3	5.1.1
VII.	(i) Explain the procedure of lowering a lifeboat by gravity davit. (ii) Describe HRU and its uses. (iii) What is SART?	5 5 5	L2 L2 L2	4 4 4	5.1.1 5.1.1 5.1.1
OR					
VIII. (a)	Name 5 lifeboat equipment and their uses.	5	L2	4	1.4.1
(b)	(i) What are the markings found in a lifeboat? (ii) Describe the use of sea anchor with a sketch.	5 5	L2 L2	4 4	1.4.1 1.4.1
IX.	Briefly discuss Annex 1, 5 and 6. What are the entries to be made in the Garbage Record Book on per Annex 5?	15	L3	5	4.1.1
OR					
X.	What is understood by the term MARPOL? Can we discharge plastics overboard on the high seas? What are the criteria for discharge of oil from machinery spaces on per Annex 1 of MARPOL 73/78.	15	L3	5	4.1.1

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