

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18MR35

Third Semester B.E. Degree Examination, Jan./Feb. 2021

## Elementary Navigation, Seamanship and Survival at Sea

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Draw the figure of a slip in section and in plan showing the following areas and explain each briefly:
- i) Aft deck                      ii) Accommodation                      iii) Machinery space                      iv) Forecastle  
v) Navigation bridge                      vi) Bulbous bow                      vii) Collision bulkhead                      viii) Aft peak tank  
ix) Tween deck                      x) Double bottom tanks
- (15 Marks)
- b. What are navigational lights? Explain the placement of Red, Green and White lights on board a merchant ship. (05 Marks)

OR

- 2 List the ranks of officers of the deck and engine department and explain briefly the duties of each officer. (20 Marks)

### Module-2

- 3 a. Explain dropping of an anchor in detail. (07 Marks)  
b. Write a note on the general care and maintenance of ropes. (07 Marks)  
c. Explain the uses of i) Windlass ii) Mooring gear. (06 Marks)

OR

- 4 a. List and explain the make and the properties of the following types of mooring ropes:  
i) High grade cables ii) Polyamide iii) Polyester iv) Natural rope v) Steel cables (15 Marks)  
b. Draw the cross section of JIS No1 wire rope with a brief description of its structure. (05 Marks)

### Module-3

- 5 a. Explain the 6 different types of navigation briefly. (12 Marks)  
b. Briefly write a note on the steps to be taken as heavy weather precautions in open water with respect of Navigation and stability. (08 Marks)

OR

- 6 a. What is the Beaufort wind scale? Explain the scale with scale number, wind and wave description and wind speed. (18 Marks)  
b. Explain the use of a sextant. (02 Marks)

### Module-4

- 7 a. Explain the procedure for launching a gravity Davit type life boats. (14 Marks)  
b. What are the regulating requirements for  
i) Thermal protective aid ii) Immersion sheet. (06 Marks)

OR

- 8 a. List the equipment available inside a life raft as per SOLAS. (16 Marks)  
b. Which are the emergency signals used on ship for  
i) General emergency ii) Man overboard iii) Abandon ship iv) Fire (04 Marks)

### Module-5

- 9 a. What is MARPOL and explain the 6 annexes briefly? (18 Marks)  
b. What is STCW convention? (02 Marks)

OR

- 10 Explain briefly each chapter of SOLAS. (20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.