

B. Tech Degree IV Semester Examination in Marine Engineering July 2010

MRE 406 SEAMANSHIP AND NAVIGATION

Time : 3 Hours

Maximum Marks : 100

(Each question carries 20 marks)

- I. (a) In a cargo vessel who is overall in charge of machineries? Mention his subordinates and their functions briefly.
(b) Who is the Second-in-command of a vessel? How does the command structure function?
(c) Where is a vessel navigated from? Name some of the instruments used there.
(d) Where is the food prepared in a vessel? Who does it? Write briefly about his duties.
(e) Who is overall in charge of Engine Room? Who will oversee day today work of 5th Engineer?

OR

- II. (a) What are the uses of a windless? How does it differ from a Capstan? How many such units will be provided in a vessel?
(b) When do we use navigational lights?
(c) Draw a sketch of a large tanker exhibiting all navigational lights required.
(d) What flags a vessel wears normally? What is a courtesy flag?

- III. (a) What are the types of ropes generally used aboard a vessel? Which is the strongest type?
(b) Why do we need 'rat guards'? Who provides these?
(c) With the help of a diagram name the mooring lines required to secure a vessel to a jetty.
(d) Write short notes on (i) Bitter end (ii) Bow stopper (iii) Spurling pipe

OR

- IV. (a) How do the following differ (i) A Knot (ii) A Bend (iii) A Hitch. Give two examples of each with their uses.
(b) Why do we use heaving line? What knot do we use on this?
(c) Can we use two anchors together? If so, when and what precautions are to be taken?
(d) Mention the advantages/disadvantages of synthetic ropes over natural fibre ropes.

- V. (a) Name the heavenly bodies that can be used for practical astro navigation.
(b) What aspect of the heavenly body do we observe while taking sights?
(c) What is a constellation? At what times you can take observations using them?

OR

- VI. (a) What are the different types of Compasses we use on board? What are their principles of operations?
(b) Where do we plot position of our vessel? If paper charts are removed what is the alternate system introduced?
(c) How a vessel does adjust the clock while changing zones? Narrate an example while sailing from Japan to Canada crossing the Pacific Ocean.

- VII. (a) What is the carrying capacity of a life boat? How many life boats can a Vessel carry? Compare a davit launched life boat and a free fall life boat.
- (b) Since when the 'rescue boats' were introduced on board? Why are they needed? Can life boat be designated as 'Rescue boat'?
- (c) What is the need to carry life rafts on board in addition to life boats? How are those released?

OR

- VIII. Draw a diagram of an inflated life raft marking important parts.

- IX. (a) Enumerate the pyrotechniques carried on board.
- (b) What is 'muster list'? Where are they displayed?
- (c) What is the alarm signal for
- (i) Emergency stations
 - (ii) Fire stations
 - (iii) Abandon ship

OR

- X. (a) Expand the following:-

- (i) SOLAS
- (ii) U.T.C
- (iii) SOS
- (iv) GPS
- (v) AIS

- (b) How often are life boat drills to be carried out? Who prepares the Muster List?
- (c) How many annexures are there in MARPOL? Which was the last one brought in force? How plastics can be disposed off?