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***B.Tech. Degree IV Semester Examination in
Marine Engineering June 2014***

MRE 406 SEAMANSHIP AND NAVIGATION

Time : 3 Hours

Maximum Marks :100

(5 x 20 =100)

- I. (a) State the use and working principle for echo sounder with a neat diagram. (10)
 (b) Name any four errors found during the use of echo sounder and their causes. (10)
- OR**
- II. (a) What principle is used for range and bearing determination in a radar? (10)
 (b) Name various controls in radar and explain their functions. (10)
- III. (a) Draw a neat diagram and label the various parts of an anchor. (10)
 (b) Explain the circumstances under which a vessel will be required to anchor. (5)
 (c) State the various precautions to be exercised while at anchor. (5)
- OR**
- IV. (a) Differentiate between a derrick and a crane. (10)
 (b) What is 'SWL' for derrick and where is it marked? (5)
 (c) What is runner wire and topping lift wire on a derrick? (5)
- V. (a) Name ten life boat equipments. (5)
 (b) What are the markings found on a life boat? (5)
 (c) Explain the procedure for lowering life boats. (10)
- OR**
- VI. (a) Name the different types of life raft. (5)
 (b) What is the approved maximum and minimum size of a life raft? (5)
 (c) How are the survivors in life raft protected from the severe weather conditions experienced out at sea? (10)
- VII. (a) What is Marpol 73/78? (5)
 (b) List the various Annexes under Marpol 73/78 and their date of enforcement. (5)
 (c) What are the criteria for discharge of oil from the cargo space of a tanker under Annex-1 of Marpol 73/78? (10)
- OR**
- VIII. (a) What are the latest amendments to Annex-5 of Marpol 73/78? (10)
 (b) List the special areas under Annex-5 of Marpol 73/78. (10)
- IX. (a) What are the two basic categories of fibre ropes, explain with examples, based on material of construction? What are the advantages and differences between them? (10)
 (b) Differentiate between knots, bends and hitches. (5)
 (c) Draw the basic construction of a fibre rope and name the parts. (5)
- OR**
- X. (a) Draw a neat sketch of a vessel alongside a jetty showing all the mooring lines with their names. (10)
 (b) What is the use of mooring winches? (5)
 (c) What is a rat guard? Where is it used? (5)