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***B.Tech. Degree IV Semester Examination in Marine
Engineering June 2015***

MRE 1406 SEAMANSHIP AND NAVIGATION

Time : 3 Hours

Maximum Marks : 100

(5 × 20 = 100)

- I. (a) Write short notes on the following. (10)
(i) Forecastle (ii) Bridge (iii) Steering platform (iv) Cargo hold (v) Galley
(b) Briefly describe the organization of various departments onboard a merchant vessel specifying the duties of concerned officers and ratings. (10)
- OR**
- II. (a) Briefly explain the function and operation of the following deck machinery/equipment (10)
(i) Mooring winches (ii) Deck cranes (iii) Anchor (iv) Hatch covers.
(b) What all precautions will you take as a prudent engineer officer in case the bridge notifies you of encountering very rough weather? (10)
- III. Briefly provide an introduction to at least 10 of the various types of Knots/Hitches/Bends used onboard, with sketches. Also specify where they are generally used. (20)
- OR**
- IV. (a) What are the factors taken into consideration by master (captain) while proceeding for anchoring at a place? (10)
(b) Discuss regarding the scope of anchor chain cable to be paid out based on the depth and type of sea bed and the holding power of different types of anchors. (10)
- V. Briefly explain the working principle of the following navigational equipment with suitable sketches. (20)
(i) Barometer (ii) Magnetic compass (iii) Sextant (iv) Doppler speed log (v) Echo sounder.
- OR**
- VI. (a) Briefly explain the following terms with suitable sketches. (10)
(i) GHA (ii) International Date Line (iii) GMT (iv) Declination (v) Celestial sphere.
(b) Explain how the time is managed on board a vessel going on a westerly course from longitude 105 deg E to 030 deg W. (10)
- VII. (a) List out the life boat equipment as per the SOLAS requirements. (10)
(b) What do you understand by the term SOLAS pack-A concerning life raft? (10)
- OR**
- VIII. (a) List out the mandatory pyrotechniques which need to be carried onboard cargo ships as per regulations of SOLAS chapter III and explain their use. (10)
(b) List out at least 10 of the internationally recognized distress signals. (10)
- IX. (a) Briefly describe the launching procedures of (i) Free fall life boat (ii) Inflatable life raft without davit. (10)
(b) Make a sample emergency muster list detailing its contents. (10)
- OR**
- X. (a) Briefly discuss the various annexes of MARPOL 73/78? (9)
(b) What all entries would you make in the Oil Record Book as per Annex I of MARPOL 73/78? (5)
(c) What are the emission control measures in place as per Annex VI of MARPOL 73/78 including the latest amendments? (6)