Indian Maritime University

(A Central University, Govt of India)

May-June 2018 End Semester Examinations

B. Tech (Marine Engineering)

Semester-VI

MARINE ELECTRICAL TECHNOLOGY (UG11T2603/1603)

Date: 13.06.2018 Max Marks:100 Marks
Time: 3 Hrs Pass Marks: 50 Marks

Part A (10 × 3 = 30 Marks)
All Questions are compulsory

1. (a) What is the purpose of voltage regulator?
   (b) Where emergency generator is located?
   (c) Define single line diagram.
   (d) Name the protective devices for motors.
   (e) Why high and low-level alarms are used on tanks?
   (f) Name the types of faults which occurs on generator.
   (g) Define Ingress protection code.
   (h) Define hazardous zone.
   (i) Define electric shock.
   (j) High voltage machineries are preferred onboard. Jutify

Part B (5 × 14 = 70 Marks)
Answer any five of the following

2. Discuss thyristor based electronic automatic voltage regulator with suitable diagram. Explain the function of each element. (14)

3. (a) Sketch and explain the trickle charging circuit for batteries onboard ship. What are two basic steps need to be taken to prevent any kind explosion in battery room? (7)
   (b) Why insulated neutral system is preferred onboard ship? Discuss with neat sketch. (7)

4. (a) What is emergency switch board? What are the equipment's which get supply from emergency switch board? (7)
   (b) What ismotor enclosure? What is common types for motor enclosures? (7)

5. (a) Draw and explain the working principle of salinometer. (7)

   (b) Explain the working of watertight door, with neat sketch. (7)

6. (a) Draw and Explain how insulation resistance of a three – phase induction motor is measured by using megger. (7)

   (b) Explain with a neat diagram, how the earth fault monitor detects the fault? (7)

7. A diesel electric propulsion ship has a d.c. motor as a drive for the propeller. Power supply to thepropulsion motor is from an A.C. generator, which generates power at constant voltage andfrequency. Explain with a neat diagram how the system fulfils the requirements of maneuvering i.e.(i) Variable Speed (ii) Direction of rotation (ahead and astern) (14)

8. (a) What are the electrical survey carried out on Switchboard. (7)

   (b) What are safety precautions to be carried out while using power tools onboard ship? (7)