



**INDIAN MARITIME UNIVERSITY**  
**B.Tech (MARINE ENGINEERING)**

**December 2017 Examinations**  
**SIXTH SEMESTER**

**MARINE ELECTRICAL TECHNOLOGY (UG11T2603)**

**Date: 28.12.2017**

**Time: 3 Hrs**

**Max. Marks: 100**

**Pass Marks: 50**

**Part A**

**(10 × 3 = 30 Marks)**

**Answer all the Questions**

1. (a) Shipboard Generators are normally connected in STAR. Why?
- (b) State the SOLAS Regulations as applied to Emergency Generator on board.
- (c) Briefly explain the Temperature classification of cables?
- (d) What do you understand by 'Ladder Diagrams'?
- (e) Draw the Characteristic curve of an Induction Motor?
- (f) Differentiate the faults on Main Generators & Emergency Generator?
- (g) What do you understand by 'Periodic surveys'?
- (h) Give a brief note on superconductivity in propulsion.
- (i) **Exi** type of apparatus is used in which area of a Tanker, and explain the reason?
- (j) List out the precautions to be observed for operation of an HV installation.

**Part B**

**(5 × 14 = 70 Marks)**

**Answer any five from the following**

2. Explain the working of a Brushless Generator on board a ship with a neat sketch and highlight the importance of an AVR in the circuit. (14)
3. (a) With a neat diagram explain the automatic starting of an Emergency Generator. (8)

- (b) Discuss the maintenance checks on an Emergency Switch Board. (6)
4. Draw a neat single line diagram of a typical shipboard Electrical distribution and mark all the components. Also list out the Safety components (14)
- 5 a) Explain with a working example, what is Sequential Starting. (7)  
b) Explain the working of a Rudder Angle Indicator. (7)
- 6 a) Explain the process of Dry-docking carried out on a vessel (7)  
b) Describe the survey requirements of a Main Switch Board. (7)
7. (a) Write a short note on Electro-Hydraulic steering gear systems with neat diagrams. (7)  
(b) What are the necessary precautions to be observed while fault finding & repairs onboard. (7)
8. (a) Discuss the points to be checked on Electrical machineries during a safe Watch-keeping. (7)  
(b) What measures are taken to safeguard against electric shock in case of portable tools and hand lamps on board ship? What first aid must be given to person suffers an electric shock. (7)

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