

# INDIAN MARITIME UNIVERSITY

(A Central University, Govt. of India)

May/June 2015 End Semester Examinations

SEMESTER – VI, B.TECH ( MARINE ENGINEERING)

MARINE ELECTRICAL TECHNOLOGY (T 1603)

Date:13.06.2015

Time:-3 Hrs

Max.Marks:100

Pass Marks:50

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**PART – A** (3 x10 = 30 Marks)  
(Compulsory Questions)

1. a) What is called residual magnetism? Why it is important?
- b) Is ship alternator is star wound or delta wound? Justify your answer.
- c) What is the meaning of an excitation in an alternator? How it is supplied?
- d) Why AC distribution is preferred over a DC distribution onboard a ship?
- e) What is called preferential trip? Why it is applied in main switch board?
- f) State the advantage of azipod system.
- g) Draw a neat sketch of navigation light indication panel.
- h) Draw the bimetallic over load relay.
- i) What is pole changing? How it is achieved?
- j) What are the indications of fully charged cell?

**PART – B** (5 x14 = 70 Marks)  
(Answer any five of the following)

2. a) How does a thyristor – controlled static AVR work? Explain the same with a suitable diagram. (7)
- b) Where is an excitation trip used? What is the symptom of incorrect setting? (7)
3. a) Draw a neat flow chart for manual / automatic starting procedure for emergency generator. (7)
- b) When does a ship require shore supply? State the procedure for taking shore supply. (7)

4. a) Define Starter. Why do we need soft starter or electronic starter? (7)  
b) What is called sequential restarting? Explain the purpose of sequential restarting. (7)
5. a) Draw and explain portable oxygen analyzer. (7)  
b) What is intrinsically safe Circuit? Where these Circuits are used on a tanker? Draw a Circuit and explain its operation (7)
6. a) With a neat sketch explain how insulation resistance is measured in 3 – phase induction motor. (7)  
b) How an earth fault in a deck light fitting is detected and rectified? (7)
7. a) Draw a neat sketch of a Ships' Typical Electrical Distribution System. (7)  
b) What are the hazardous area on a ship and what type of equipment should be installed in each location? (7)
8. a) 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)  
b) Draw the neat sketch and explain in detail about emergency switch board. (7)

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