

# CBCS SCHEME

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15MR61

## Sixth Semester B.E. Degree Examination, June/July 2019 Marine Electrical Technology

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. What are the 4 common methods for the distribution of AC power on board ships? Draw and explain. (12 Marks)  
b. Explain the different hazardous zones on ships. (04 Marks)

OR

- 2 a. What are the SOLAS requirements for an emergency generator and emergency sources of power? (12 Marks)  
b. Name the typical list of essential services. Which must be simultaneously supplied from the emergency sources of power. (04 Marks)

### Module-2

- 3 a. What is an AVR? Explain its working with the help of a neat labeled diagram. (10 Marks)  
b. What is the difference between an Earth fault and a Short Circuit fault? Explain with the help of a diagram. (06 Marks)

OR

- 4 Explain the two synchronizing methods used on board ships with the help of a neat diagram. (16 Marks)

### Module-3

- 5 a. With the help of a neat labeled diagram, explain the working of a general service incandescent lamp. (08 Marks)  
b. Explain the insulation testing procedure of a motor with the help of a megger. (08 Marks)

OR

- 6 a. Explain the working of a low pressure mercury florescent lamp. (10 Marks)  
b. Draw and explain the 5 specially designed navigation lights mandatory on board ship. (06 Marks)

### Module-4

- 7 a. Explain the working of a Cyclo converter with the help of a neat diagram. (12 Marks)  
b. Give four reasons for the use of electric propulsion. (04 Marks)

OR

- 8 a. Sketch the diagram of a 4 ram electro hydraulic steering system showing pump isolation valves, by pass valves. (07 Marks)  
b. What is a Windlass? Explain any one type of windlass. (09 Marks)

### Module-5

- 9 a. What is Cathodic protection? Explain ICCP with the help of a diagram. (12 Marks)  
b. What are the reasons for reduced rated capacity of a battery? (04 Marks)

OR

- 10 a. Explain with the help of a diagram the working of an alkaline cell. (10 Marks)  
b. What are the safety precautions to be observed with lead acid and alkaline batteries and the first aid in case of contact? (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.