

# CBCS Scheme

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15MR61

## Sixth Semester B.E. Degree Examination, June/July 2018

### 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. Draw a system diagram of a typical electrical distribution system showing main generator, emergency generators, shore supply, 440V supply, 220V supply, circuit breakers and transformers. (12 Marks)
- b. What are the different types of explosion protection employed for electrical equipment in preventing explosions in hazardous areas? (04 Marks)

OR

- 2 a. Draw and explain the typical arrangement of a shore supply on board ships. (11 Marks)
- b. Write down the starting and stopping instructions for an Emergency generator on board ship. (05 Marks)

#### Module-2

- 3 a. What are the two types of earth fault indicating equipment available on board? Explain the working of any one with help of a diagram. (10 Marks)
- b. Explain the main reasons for providing electrical protective equipment on board ships. (06 Marks)

OR

- 4 a. Explain the basic working principle of an AC generator with the help of a neat diagram. (12 Marks)
- b. What are the questions to be satisfied for synchronizing of AC generators? (04 Marks)

#### Module-3

- 5 a. Explain the working of a Ionization Smoke detector with the help of a neat diagram. (12 Marks)
- b. What are the main electrical tests done on board ships? (04 Marks)

OR

- 6 a. Draw and explain a Low – Pressure Sodium Vapour type discharge lamp. (10 Marks)
- b. How is electrical insulation classified? What are the different insulation classes, explain. (06 Marks)

#### Module-4

- 7 a. Write a short note on electrical propulsion systems. List its advantages and disadvantages. (12 Marks)
- b. Explain water jet propulsion systems and its features. (04 Marks)

OR

- 8 a. List the tests to be carried out on a steering gear system 12Hrs prior to a voyage, as per SOLAS. (07 Marks)
- b. What is a windlass? Explain any one types of windlass. (09 Marks)

#### Module-5

- 9 a. Explain the 4 stages of operation of lead acid battery with the help of neat diagrams. (12 Marks)
- b. What are the indications that a lead acid battery is fully charged? (04 Marks)

OR

- 10 a. What are the safety precautions to be observed in battery charging rooms? (10 Marks)
- b. Explain the corrosion process on the ship's hull (06 Marks)

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