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## Sixth Semester B.E. Degree Examination, July/August 2022 Marine Electrical Technology

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the effects of Marine environment and inclination on electrical equipment. (10 Marks)
- b. What is a line diagram (with respect to) electrical systems? As per classification societies, what should they depict? (10 Marks)

**OR**

- 2 a. Discuss and explain the differences between: i) Block diagram                      ii) System diagram  
iii) Circuit diagram                      iv) Wiring diagram. (10 Marks)
- b. Discuss the do's and don'ts while working with electrical equipment. (10 Marks)

### Module-2

- 3 a. With the help of a block diagram, explain the working of a modern AVR. (15 Marks)
- b. Explain the effects of KVAR loading. (05 Marks)

**OR**

- 4 a. Explain the procedure for paralleling/synchronizing of two generators and the conditions essential for their paralleling. (10 Marks)
- b. What are fuses? Explain the factors that must be considered while selecting a fuse. (10 Marks)

### Module-3

- 5 a. Briefly explain the solar regulations in part 'D' for electric cables and their use on ships. (10 Marks)
- b. Explain the working and construction of a high pressure Mercury fluorescent lamp circuit. (10 Marks)

**OR**

- 6 a. Draw and explain the working of a ionization type smoke detector. (10 Marks)
- b. Explain the virtues of an intelligent fire alarm system. (10 Marks)

### Module-4

- 7 a. What is an electrical propulsion system? What are its advantages and disadvantages? (10 Marks)
- b. Briefly explain the salient features of an Diesel electric propulsion system. (10 Marks)

**OR**

- 8 a. What is a tunnel thruster? Draw and explain its features. (10 Marks)
- b. What is a water jet propulsion system explain its features? (10 Marks)

### Module-5

- 9 a. What are the characteristics of a good primary cell? (10 Marks)
- b. Explain the working principle of a wet or flooded lead acid battery. (10 Marks)

**OR**

- 10 a. Draw and explain an emergency battery circuit. (10 Marks)
- b. Explain Cathodic protection of the ships hull. (10 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.