V61/T11056/EE/20160719

Time : 3 Hours **Marks : 80**

Instructions :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

1. Solve any **four** sub-questions.

   a) Draw the block diagram layout of emergency power distribution onboard a ship. 5

   b) Briefly explain the principle of operation of an alternator. Is the principle different in a DC generator. 5

   c) With a suitable diagram explain brushless excitation. 5

   d) Draw the block diagram of an AVR and label its parts. 5

   e) What is preferential tripping? 5

2. Solve any **four** sub-questions.

   a) With suitable examples explain the difference between "Essential" and "Important" supplies. 5

   b) List the various protective devices fitted on a circuit breaker connecting alternator to a switchboard. 5

   c) List the advantages and disadvantages of High Voltage on ships. 5

   d) Explain the principle of operation of a salinometer. 5

   e) What are the various factors taken into consideration for construction of a marine power cable? 5

3. Solve any **four** sub-questions.

a) List three types of maintenance concepts in use. Explain the concept that is followed onboard ships. 5

b) Write any five major maintenance activities undertaken on an alternator. 5

c) What is the purpose of periodic surveys? List the various type of surveys conducted on a ship. 5

d) What are the factors on which depends the extent of damage/injury due to electric shock? 5

e) What are the principles of safe watch-keeping? 5

4. Solve any **four** sub-questions.

a) What are hazardous areas onboard a ship? How are these classified? 5

b) Briefly explain any two of the following terms as applicable to tankers

i) Flammability limit

ii) Ignition Energy

iii) Calorific value

iv) Temperature class

v) Gas Groups 5

c) Briefly state the SOLAS regulations as applicable to electro hydraulic and electric steering gear. 5

d) Write the advantages of electric propulsion. 5

e) What do you understand by intrinsic safety? 5

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