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**B.Tech. Degree VI Semester Supplementary Examination in  
Marine Engineering June 2022**

**MRE 1603 SHIP FIRE PREVENTION AND CONTROL  
(2013 Scheme)**

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) Explain the principles of fire fighting with the help of a fire tetrahedron. (12)  
(b) Write short notes on (8)  
(i) Limits of flammability  
(ii) Stages of fire initiation and propagation.
- OR**
- II. What is fire triangle? Explain in detail, the types of fires and sources of fires on ship. Describe the methods by which each type of fire is extinguished on board. (20)
- III. (a) Explain different classes of bulk heads and standard fire test. (12)  
(b) Describe in detail, fire and safety precautions to be taken on electrical installations on board a ship. (8)
- OR**
- IV. Sketch and describe cargo tank venting system used on oil tankers. Explain primary and secondary means of venting. (20)
- V. (a) Explain conventional and addressable fire detection system. What is the difference between them? Enumerate advantages of each system. (12)  
(b) Sketch and describe working of an ionisation type smoke detector. (8)
- OR**
- VI. Explain the various fire and safety precautions to be taken on cargo ships and tankers while working on board. (20)
- VII. (a) Sketch and describe a fixed CO<sub>2</sub> extinguishing system for cargo ship machinery space. What are the requirements for fixed CO<sub>2</sub> systems as per SOLAS? (14)  
(b) State the advantages of using CO<sub>2</sub> as an extinguishing medium for fixed fire fighting system on ships. (6)
- OR**
- VIII. (a) Sketch and describe a fixed foam fire fighting system for deck area in an oil tanker. (14)  
(b) What are the requirements of SCBA as per SOLAS? (6)
- IX. (a) Describe the method of fighting fire in the machinery space of a cargo ship. (10)  
(b) Explain how small, medium and large scale machinery space fires are dealt with. (10)
- OR**
- X. Write short notes on: (6)  
(a) Fire signals and Fire muster. (7)  
(b) Importance of fire drills and maintenance of fire fighting equipments. (7)  
(c) Fire fighting in Ports and Drydocks. (7)