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***B.Tech. Degree VI Semester Regular/Supplementary Examination in
Marine Engineering April 2021***

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

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. Write short note on:
- (a) Flash point and fire point. (4)
- (b) Auto ignition and self spontaneous ignition. (6)
- (c) Fire triangle and fire tetrahedron. (10)
- OR**
- II. (a) Describe the different classes of fire and how they can be effectively control and extinguish. (12)
- (b) Explain back draft, flash over and BLEVE. (8)
- III. (a) Sketch and describe fire main system. How to isolate main fire and emergency fire pump. (10)
- (b) Explain type A ship ventilation and cargo venting system. (10)
- OR**
- IV. Write short note on:
- (a) Standard fire test. (8)
- (b) Emergency escape route. (6)
- (c) Fire station and its controls. (6)
- V. (a) Explain major difference between conventional and addressable fire detection system. (6)
- (b) Sketch and explain smoke, heat and flame detector. (10)
- (c) Explain testing procedure for each detector and their frequency. (4)
- OR**
- VI. (a) When and why hyper mist is installed onboard? Statutory requirement for hyper mist system? (6)
- (b) Sketch and explain the hyper mist system. (10)
- (c) Explain hyper mist activation in automatic mode and local mode. (4)
- VII. (a) Sketch and describe a CO₂ type of fixed fire installation used onboard engine room. (12)
- (b) What are the advantages of CO₂ over foam? (4)
- (c) Explain properties of CO₂ and filling pressure. (4)
- OR**
- VIII. (a) Sketch and explain inert gas plant on oil tanker. (12)
- (b) Explain fire safety on inert gas plant/system. (8)

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- IX. Enumerate fire fighting procedure in
- (a) Accommodation space. (6)
 - (b) Machinery space. (8)
 - (c) Cargo space (explain with example of car carrier or container ship). (6)

OR

- X. (a) Explain fire prevention in type A ships during cargo operation and tank cleaning. (12)
- (b) Explain fire organization in ship. (4)
 - (c) Re-entry procedure after using fixed fire fighting system in engine room. (4)
