

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – December 2023**  
**Programme Name: B Sc (NS)**  
**Semester: V**  
**Subject Code: UG21T5503**  
**Subject Name: Life Saving & Fire Fighting Appliances**

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Date: 08.12.2023

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

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General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in the respective section.

**Section A**

Ten MCQs of 01 Mark each – Choose the correct answer as applicable.

1. What is the expiry period for pyrotechnics from the date of manufacture?
  - a) 36 months
  - b) 24 months
  - c) 18 months
  - d) 30 months
2. Lifeboats on cargo ships should be capable of being launched at what trim and heel conditions
  - a) Trim of 10 mtrs and Heel of 20 mtrs
  - b) Trim of 10 deg and Heel of 20 mtrs
  - c) Trim of 10 deg and Heel of 20 deg
  - d) None of the above
3. AFFF stands for
  - a) Aqueous Film Forming Foam
  - b) Automatic Film Forming Foam
  - c) Aqueous Froth Forming Foam
  - d) Aqueous Fat Forming Foam
4. The fastest detection of a burning cotton mattress will be done by
  - a) Heat detector
  - b) Flame detector
  - c) Smoke detector
  - d) Rate of rise heat detector
5. Which shipboard equipment will detect a signal from a SART?
  - a) S-Band Radar
  - b) X-band Radar
  - c) AIS receiver
  - d) The auto-alarm
6. The fuel capacity in a life boat should be sufficient for

- a. 3 kts speed and 12 hours duration
  - b. 6 kts speed and 4 hours duration
  - c. 3 kts speed and 24 hours duration
  - d. 6 kts speed and 24 hours duration
7. A60 Class bulkheads will not allow the increase in unexposed side of bulkhead to increase beyond \_\_\_\_\_ temp and \_\_\_\_\_ duration
- a) 14 Deg C & 60 Mins
  - b) 120 Deg C & 60 Mins
  - c) 140 Deg C & 60 Mins
  - d) 200 Deg C & 60 Mins
8. For fixed gas fire extinguishing systems, excessive pressure is released in
- a) Adjoining compartment
  - b) Open atmosphere
  - c) CO<sub>2</sub> Room
  - d) None of the options
9. The lifeline of a breathing apparatus is connected by
- a) a Bowline
  - b) a Clove hitch
  - c) a D shackle
  - d) a snap hook
10. In a fixed gas fire extinguishing system, Pre-discharge alarms are activated by
- a) Fire alarm
  - b) opening cabinet door of pilot cylinders
  - c) opening CO<sub>2</sub> room door
  - d) None of the options

### **Section B**

(Marks: 2x5=10)

11. Explain the Drill Planner and its purpose.
12. What are the requirements for the Self Activating Smoke Signal?
13. What is International Shore Connection and its purpose? What are its Outer and inner diameter dimensions?
14. List different classes of fire on a ship.
15. Describe class A-60 division on a ship

### **Section C**

#### **Answer any 5 out of 7 Questions**

16. List any 20 lifeboat equipments. (10 marks)
17. Explain the method of launching a life raft by Davit launched method. List the service requirements of a Life raft. (10 marks)
18. Explain components of an "Inert Gas System" with their purpose. (10 marks)

19. a) Explain how Heat or Fire can spread on board a ship (5 marks)
- b) Compare advantages and disadvantages of Heat and Flame detectors. (5 marks)
20. a) Describe working of a Water sprinkler firefighting system. (5 marks)
- b) Draw a CO<sub>2</sub> type fire extinguisher naming all parts (5 marks)
21. a) Describe markings on a portable fire extinguisher (5 marks)
- b) Describe contents of Fireman's outfit (5 marks)
22. a) Describe issues to be considered when fighting fire on board when in port. (5 marks)
- b) Explain "Ionization" method used for smoke detector (5 marks)

