Indian Maritime University

(A Central University, Govt of India)

End Semester Examinations – June 2024

Programme Name: B Tech (ME)

Semester: VI

Subject Code: UG11T3601

Subject Name: SHIP FIRE PREVENTION AND CONTROL

Date: 13.06.2024	Max Marks: 70
Duration: 03 Hrs	Pass Marks: 35

General Instructions

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

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. **How do you classify fire of combustible materials such as wood, cloth, paper, rubber on ships?**
   A: Class D
   B: Class A
   C: Class B
   D: Class C

2. **What is the best method to control Class C fires?**
   A: Dry chemical powders
   B: Water
   C: Foam
   D: Grease

3. **What is the purpose of fire zones on vessels?**
   A: Appointing places where fire can be lit
   B: Containing outbreak of fire
   C: All of the above
   D: None of the above

4. **Where should the emergency fire pump be located?**
   A: Deck

B: Outside engine room
C: Bridge
D: Inside engine room

5. **Which of the following fire detection and alarm systems are to be tested WEEKLY?**
A: Inspection of accessible detectors for evidence of tampering obstruction
B: Verification of all fire detection and fire alarm control panel indicators to be functional
C: Testing fire doors located in main vertical zone bulkheads
D: None of the above

6. **Which of the following is NOT part of fireman's outfit onboard a vessel?**
A: Breathing apparatus
B: Safety shoes
C: Hand gloves
D: Plastic cover to be worn above clothing

7. **Typically when is Hot Work Permit issued?**
A: 3 days before hot work commences
B: 7 working days before hot work commences
C: Immediately before hot work commences
D: None of the above

8. **Who is responsible for ensuring regular updating of fire control plan?**
A: Master
B: Ship owner
C: Ship management team
D: All of the above

9. **On what principle does fire damper work?**
A: Releasing CO2
B: Releasing water
C: Preventing additional oxygen from entering the space
D: None of the above

10. **What is the purpose of International Shore Coupling?**
A: To use during wear and tear of hoses on vessel
B: Take connection from shore or other ships for firefighting in case of onboard pump failure
C: Stabilizing fire extinguishers
D: Lowering lifeboats

Section B

Five Questions of 02 Marks each

11. Write a short note to explain self contained breathing apparatus.

12. How are class B fires different from class C fires?

13. A) What does a fire triangle denote? (1 mark)
    B) Explain its purpose in fire prevention (1 mark)

14. What causes spontaneous combustion?

15. A) Define FSS Code (1 mark)
    B) What is the purpose of FSS Code? (1 mark)

Section C

Seven Questions of 10 Marks each of which any 05 questions to be answered.

16. Explain:
    A) What are the usual locations for Main Fire Pumps on vessels? (3 marks)
    B) As per SOLAS, what are the capacity requirements for Main Fire Pumps on cargo ships of different sizes? (7 marks)

17. A) Explain fire alarm and how fire signal should be sounded? (5 marks)
    B) What action is to be taken by crew when fire alarm is sounded? (5 marks)

18. Explain fire prevention methods for chemical tankers (10Marks).

19. Write short notes explaining:
    A) Purpose of fire doors (3 marks)
    B) Size of fire hose and size and mode of nozzles (4 marks)
    C) Purpose of inert gas system (3 marks)

20. A) What all should fireman's outfit onboard be fitted with? (5 marks)

B) As per SOLAS, minimum how many fireman's outfits are required on cargo, passenger and tanker vessels? Where is this outfit stored? (5 marks)

21. What are the different fire classes and how to extinguish each? (10 marks)

22. A) When is CO2 released in the engine room? (3 marks)

B) Why are precautionary measures taken prior to releasing CO2 in the engine room? (3 marks)

B) Enlist precautionary action to be taken prior to releasing CO2 in the engine room (4 marks)