

INDIAN MARITIME UNIVERSITY
(A Central University, Govt. of India)

May/June 2015 End Semester Examinations

SEMESTER – VI, B.TECH (MARINE ENGINEERING)

SHIP FIRE PREVENTION & CONTROL (T 1601)

Date: 06.06.2015

Time: -3 Hrs

Max. Marks: 100

Pass Marks: 50

PART – A **(3 x10 = 30 Marks)**
(Compulsory Questions)

1. a) What is fire ? State the chemical reactions occurred during occurrence of Fire?
- b) What are the things showed in a Fire Control Plan? State the locations in which it is stored /exhibited and the reason
- c) State how does oil vapour density affect safety?
- d) Sprinkler heads bulbs are coloured Red, yellow and Green. State their temperature ratings and location of use?
- e) What are the uses of (i) Remote Emergency Electrical Trips and (ii) Quick Closing Valves? Explain the location and how are they operated?
- f) Describe a Standard fire Test for A60 Class Division Bulkhead
- g) State the usual fire alarm used in ship's accommodation and engine room . from where and how it can be activated
- h) Briefly state about CABA?
- i) What is a fire damper and where it is fitted?
- j) Describe an International Shore Connection

PART – B **(5 x14 = 70 Marks)**
(Answer any five of the following)

2. a) Sketch the following detector heads and for each give a brief description of their operation
 - (i) Rate of Air temperature rise detector
 - (ii) Flame Detector**(5+ 5=10)**
- b) State the location where there detectors are fitted **(4)**

3. "Fire Control Plan" is one of the requirement to be carried On- Board Ship. State the International Convention under which the plan is made mandatory. With reference to this plan explain the following
- What all information's are available in this plan ?
 - In what all locations it is stored/ exhibited and the reason
- (4+6+4= 14)**
4. a) Sketch , describe and label a simplified fire alarm circuit that may be incorporated in a control panel for fire detectors
- b) State the requirements of Fire Fighting Appliances for Machinery spaces containing Internal Combustion Machinery as per MERCHANT SHIPPING (FIRE APPLIANCES) RULES
- (10+4= 14)**
5. State the requirements of the following as per SOLAS:
- Class A Divisions
 - Fire Doors
- (7+7= 14)**
6. a) Considering that the engine room is the most common single space on board ship for fires to break out , discuss the merits and demerits of the following fire fighting systems:
- Carbon-dioxide
 - Pressure Water Spray
 - High Expansion Foam
- b) State whether any other alternative arrangements are there , which can also act as emergency fire pump?
- (10 +4=14)**
7. a) Describe with sketch portable mechanical Foam fire extinguisher . State its contents, operation, performance and recharging.
- b) State the required Water Jet capacity the Emergency Fire Pump must be capable to deliver as per SOLAS
- (10+4= 14)**
8. a) Sketch and describe an inert gas generator system for machinery and cargo spaces.
- b) How does the auto ignition temperature of fuel oil and lubricating oil affect safety?
- (10+4= 14)**
