Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem Examination Dec-2023

FT3CO38 Fire Engineering -I

Programme: B.Tech. Branch/Specialisation: FT

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. The fire assembly point can be best described as- **1**

(a) Where the fire extinguishers are stored
(b) An area that has a high risk for fires to occur
(c) An area where you are required to assemble in the event of a fire
(d) An area you are required to avoid in the event of a fire

ii. Sun produces heat and light through- **1**

(a) Nuclear reactions (b) Combustion
(c) Inflammation (d) Fractional distillation

iii. Which type of fire extinguish do you use to fight an electrical fire if a carbon dioxide extinguisher is unavailable? **1**

(a) Dry powder (b) Water Fire Extinguisher
(c) Foam (d) Wet chemical

iv. If electric wires and appliances are overheated due to high voltage of electric current they can- **1**

(a) Catch fire (b) Burn
(c) Freeze (d) Both (a) & (b)

v. Do not use appliances, if- **1**

(a) Damaged (b) Wire exposure
(c) Working properly (d) Both (a) & (b)

vi. Protected premises fire alarm system is- **1**

(a) Most basic
(b) Designed to be initiated manually
(c) Both (a) & (b)
(d) Used at banks only

P.T.O.

vii. The dry pipe sprinkler valve is equipped with an air pressure gauge above the clapper and a water pressure gauge below the clapper. The air pressure gauge will read- **1**
(a) The same as the water pressure gauge
(b) Substantially lower than the water pressure gauge
(c) Substantially higher than the water pressure gauge
(d) None of the above

viii. Photoelectric smoke detectors are- **1**
(a) More sensitive to smoldering fires
(b) Less sensitive to smoldering fires
(c) Have the same reaction to smoldering fires
(d) More responsive to flaming fires

ix. What is most likely to kill you in a fire? **1**
(a) A blocked escape routes
(b) Flames
(c) Heat
(d) Smoke and noxious fumes

x. Basic types of automatic alarm-initiating devices include- **1**
(a) Heat detectors
(b) Rate-of-rise heat detectors
(c) Smoke detectors
(d) All of these

Q.2 i. State the common causes of industrial fire. **2**
ii. Write a short note on fire pyramid or triangle. **3**
iii. Explain the methods to control fire and dust explosion in flammable substances. **5**
OR iv. Discuss the effects of combustion products and control measures for them. **5**

Q.3 i. What is hazard? **2**
ii. Explain the causes & protective system for electrical fires. **8**
OR iii. Discuss the various types of fire prevention and protection system required in a chemical plant handling flammable material. **8**

Q.4 i. Write a note on grounding & bonding. **3**
ii. Explain the flammable and combustible liquid for a hazardous industry about their storing and handling. **7**

OR iii. Discuss the following terms- **7**
(a) Fire walls
(b) Fire doors
(c) Mean of egress
(d) Ignition sources

Q.5 i. Where are the smoke detectors needed & why? **4**
ii. Discuss the fire detection and alarm systems. **6**
OR iii. Differentiate between fixed & rate of rise of detectors. **6**

Q.6 Attempt any two:
i. Discuss the different types of 'Fixed Fire Installations' system. **5**
ii. What are the advantages and limitations of different types of portable fire extinguishers? **5**
iii. What is a water sprinkler system? How does it help in firefighting? **5**

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