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

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2022

FT3CO14 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.

Q.1 i. Full form of LPG is- **1**

(a) Liquefied petroleum gas (b) Liquid petroleum gas

(c) Liquefied pipe gas (d) Liquid pipe gas

ii. The amount of heat energy produced on complete combustion of 1 kg of a fuel is called- **1**

(a) Heat Value (b) Significant value

(c) Calorific value (d) Internal Energy

iii. Which of the following option reflect the correct position with regard to flash point, flame point and auto ignition point? **1**

(a) Flash point > Flame point > Auto-ignition point

(b) Flash point < Flame point < Auto-ignition point

(c) Flash point > Flame point < Auto-ignition point

(d) Flash point < Flame point > Auto-ignition point

iv. When fighting an electrical fire, which of the following should not be used- **1**

(a) Water (b) Foam

(c) Dry Chemical Powder (d) Neither (a) nor (b) should be used

v. The acronym "MSDS" stands for- **1**

(a) Mass safety data sheet

(b) Material security data sheet

(c) Material safety data sheet

(d) Master safety data sheet

vi. _____ of fuel forms poisonous carbon monoxide gas. **1**

(a) Complete combustion (b) Incomplete combustion

(c) Spontaneous combustion (d) Rapid combustion

P.T.O.

vii. Fire detection systems are the _____ line of defence in any fire protection program. **1**
(a) First (b) Second (c) Third (d) Last

viii. Two basic types of smoke detectors are- **1**
(a) Ionization & Rate-of-rise
(b) Ionization & Photoelectric
(c) Photoelectric & Rate-of-rise
(d) Rate-of-rise & Flame

ix. The acronym for putting out a fire using a fire extinguisher is PASS. What does PASS stand for? **1**
(a) Pull, Aim, Squeeze, Spread
(b) Pull, Accuracy, Squeeze, Spread
(c) Pin, Aim, Squeeze, Sweep
(d) Pull, Aim, Squeeze, Sweep

x. Which is NOT a type of fire sprinkler system? **1**
(a) Pre-Action (b) Even-Distribution
(c) Dry pipe (d) Deluge

Q.2 i. What is fire tetrahedron? **2**
ii. What is BLEVE? **3**
iii. What is fire & its classification? **5**
OR iv. Explain modes of heat transfer. **5**

Q.3 i. What is flammability range? **2**
ii. What is fire prevention? Explain different fire prevention measures. **8**
OR iii. Define NFPA hazard identification system (NFPA diamond). **8**

Q.4 i. Define fire doors & fire walls. **3**
ii. What is fire protection and its types? **7**
OR iii. What is static electricity and how it can be controlled? **7**

Q.5 i. Why fire detection is important? What are the signatures of fire which can be detected? **4**
ii. Explain smoke detector & its types. **6**
OR iii. Explain heat detector & its types. **6**

Q.6 Attempt any two:
i. Explain how foam extinguishes a flammable liquid fire. **5**
ii. Explain sprinkler system with sketch. **5**
iii. Explain CO_2 type fire extinguisher with diagram. **5**

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Marking Scheme
FT3CO14 Fire Engineering -I

Q.1	i)	Full form of LPG is: (a) Liquefied petroleum gas	**1**
	ii)	The amount of heat energy produced on complete combustion of 1 kg of a fuel is called: (c) Calorific value	**1**
	iii)	Which of the following option reflect the correct position with regard to flash point, flame point and auto ignition point? (b) Flash point < Flame point < Auto-ignition point	**1**
	iv)	When fighting an electrical fire, which of the following should not be used? (d) Neither A nor B should be used	**1**
	v)	The acronym "MSDS" stands for: (c) Material Safety Data Sheet	**1**
	vi)	…… of fuel forms poisonous carbon monoxide gas. (b) Incomplete combustion	**1**
	vii)	Fire detection systems are the…….. line of defence in any fire protection program. (a) First	**1**
	viii)	Two basic types of smoke detectors are: (b) Ionization & Photoelectric	**1**
	ix)	The acronym for putting out a fire using a fire extinguisher is PASS. What does PASS stand for? (d) Pull, Aim, Squeeze, Sweep	**1**
	x)	Which is NOT a type of fire sprinkler system? (b) Even-Distribution	**1**
Q.2	i.	What is fire tetrahedron?	**2**
	ii.	What is BLEVE?	**3**
	iii.	What is fire 2 marks Classification 3 marks	**5**
OR	iv.	Explain modes of heat transfer. (three types)	**5**
Q.3	i.	What is flammability range?	**2**
	ii.	Fire prevention 4 marks Different fire prevention measures 4 marks	**8**
OR	iii.	Define NFPA hazard identification system (NFPA diamond). As per the explanation	**8**
Q.4	i.	Define fire doors 2 marks Fire walls. 1 mark	**3**
	ii.	What is fire protection and its types?	**7**
OR	iii.	Static electricity 3 marks It can be controlled 4 marks	**7**
Q.5	i.	Importance of fire detection 2 marks Signatures of fire which can be detected 2 marks	**4**
	ii.	Explain smoke detector & its types. As per the explanation	**6**
OR	iii.	Explain heat detector & its types. As per the explanation	**6**
Q.6		Attempt any two:	
	i.	Explain how foam extinguishes a flammable liquid fire. As per the explanation	**5**
	ii.	Explain sprinkler system. 3 marks Diagram. 2 marks	**5**
	iii.	Explain CO_2 type fire extinguisher 3 marks Diagram. 2 marks	**5**

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