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

**Enrollment No.....**

Faculty of Engineering

End Sem Examination May-2024

FT3EL02 Fire Safety Codes & Standardization

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. What is the minimum water tank capacity required for Water Tender Type A as per IS 948? **1**

(a) 1,000 liters (b) 2,000 liters

(c) 3,000 liters (d) 4,000 liters

ii. What type of pump is required for a Water Tender Type B as per IS 950? **1**

(a) Positive displacement pump

(b) Centrifugal pump

(c) Rotary pump

(d) Diaphragm pump

iii. What is the minimum distance required between the ground clearance and the lowest point of the 2000 Kg DCP Tender as per IS 10993? **1**

(a) 250 mm (b) 300 mm (c) 350 mm (d) 400 mm

iv. What is the minimum length of the rescue ladder required for a Rescue Tender as per IS 956? **1**

(a) 4 meters (b) 5 meters (c) 6 meters (d) 7 meters

v. What is the maximum height of a building permitted without an elevator as per NBC Part 4? **1**

(a) 9 meters (b) 12 meters

(c) 15 meters (d) 18 meters

vi. What is the occupancy group of a building used for mercantile purposes? **1**

(a) Group A (b) Group B

(c) Group C (d) Group D

P.T.O.

vii. What is the minimum number of fire extinguishers required for a temporary structure or pandals as per IS 8758? **1**
(a) 1 (b) 2 (c) 3 (d) 4

viii. According to IS 8758, what is the maximum height allowed for a temporary structure or pandals? **1**
(a) 4 meters (b) 6 meters
(c) 8 meters (d) 10 meters

ix. What is the maximum height of a building permitted without an NOC from the fire department as per Municipal Building Bye Laws? **1**
(a) 9 meters (b) 15 meters
(c) 12 meters (d) 18 meters

x. What is the maximum distance allowed between two fire extinguishers in a building as per Municipal Building Bye Laws? **1**
(a) 10 meters (b) 15 meters
(c) 20 meters (d) 25 meters

Q.2 i. What are the types of fire detection systems mentioned in IS 2189? **3**

ii. What are the key features of a Water Tender Type A? What makes it an essential component of fire fighting operations? **7**

OR iii. Explain the importance of selection and installation of first aid fire extinguishers in buildings as per IS 2190. **7**

Q.3 i. Give the details of accessories and equipment of IS 10993, 2000 kg DCP Tender. **3**

ii. Explain the design & construction features of IS 949 Emergency (Rescue) Tender. **7**

OR iii. Describe the fire fighting system and arrangements of IS 956, functional requirements for Rescue Tender for airfields. **7**

Q.4 i. What is the difference between "Fire-resistant" and "Fire-retardant" materials as per the Life Safety Code? **2**

ii. Give classification of buildings based on occupancy as per NBC Part 4. **3**

iii. What are the requirements for the design of fire escapes in a building as per the National Building Code of India? **5**



OR iv. What are the general requirements for the fire fighting installations in a building as per the National Building Code of India Part 4? **5**

Q.5 i. Enlist the names of the Indian Standards (IS) codes relating to fire rating of materials used. **3**

ii. Give the fire fighting arrangements of temporary structures & pandals. **7**

OR iii. Give the general requirements of IS: 8758. **7**

Q.6 Attempt any two:

i. Write short note on Municipal Building Bye Laws. **5**

ii. Explain the municipal corporation role in prevention of occurrence of fires in big cities. **5**

iii. Write short note on M.P. Bhumi Vikas Rules, 1984. **5**

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# Marking Scheme

## FT3EL02 Fire Safety Codes & Standardization

| | | | |
|---|---|---|---|
| Q.1 | i) | c) 3,000 liters | **1** |
| | ii) | b) Centrifugal pump | **1** |
| | iii) | b) 300 mm | **1** |
| | iv) | b) 5 meters | **1** |
| | v) | b) 12 meters | **1** |
| | vi) | b) Group B | **1** |
| | vii) | b) 2 | **1** |
| | viii) | c) 8 meters | **1** |
| | ix) | c) 12 meters | **1** |
| | x) | a) 10 meters | **1** |
| Q.2 | i. | Types of Heat Detectors (1.5 Marks) & Smoke Detectors (1.5 Marks) | **3** |
| | ii. | Details of Design & Construction (3 Marks), Body Work & Stowage /Accessories & Equipment (4 Marks) | **7** |
| OR | iii. | selection of first aid fire extinguishers (4 Marks) and installation of first aid fire extinguishers (3 Marks) | **7** |
| Q.3 | i. | Names of Accessories and equipment of IS 10993 (3 Marks) | **3** |
| | ii. | Chassis (3 Marks) , Engine (1 Mark), Fuel System (1 Mark), Electrical System /Body Work (2 Marks) | **7** |
| OR | iii. | Agents/Pumps/Drives (2 Marks) Water Tank (2.5 Marks), Foam Tank (2.5 Marks) | **7** |
| Q.4 | i. | Difference between "fire-resistant" 1 Marks and "fire-retardant" materials 1 Marks | **2** |
| | ii. | Names of classification of 3 Occupancies | **3** |
| | iii. | Requirements (2 Marks) , Design of Fire Escape (3 Marks) | **5** |
| OR | iv. | Details of Fire Extinguishers, Fixed Fire Fighting Installations, Static Water Tank, Fire Pumps, Hydrant System , Sprinkler System, Foam System , Spray System | **5** |
| Q.5 | i. | Names of the Indian Standards (IS) codes Material | **3** |
| | ii. | Fire Fighting arrangements of Temporary Structures & Pandals:- Open Fire, Water Tank, Fire Buckets etc. At last 7 Points | **7** |
| OR | iii. | Material , Design & Construction of Temporary Structure and Pandal 2 Marks ,Desing 3 Marks , Construction 2 Marks | **7** |



Q.6

| | | | |
|---|---|---|---|
| i. | Main features of Municipal Building Bye Laws | 5 Points | **5** |
| ii. | Details of Municipal Corporation role in fire prevention | 5 Points | **5** |
| iii. | Main features of M.P. Bhumi Vikas Rules, 1984 | 5 Points | **5** |

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