

FT-7001 (CBGS)

B.E. VII Semester

Examination, November 2019

Choice Based Grading System (CBGS)

Fire Fighting Installation

Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.
iii) In each question all parts are compulsory.
iv) All parts of each question are to be attempted at one place.

1. a) Explain the fire protection water storage tank equipment and accessories with the help of suitable diagram. 7
b) Describe the different contributing factors used to determine the Needed Fire Flow Rate (NFFR) in insurance service office method. 7
2. a) Explain the various layout of automatic sprinklers system. 7
b) What are the various temperature ratings available for sprinklers heads based on standardized test? What are the four categories of sprinkler systems? 7
3. a) Give the detail description on operation of auto mode fire pump house? Explain the major components with individual function in system actuation. 7
b) Define fire load? How degree of hazard can be evaluated based on fire load density. 7

4. a) Give the detail sprinkler system input for an occupancy of ordinary hazard in context to AMAO, water density and percentages of piping. 7
b) Enlist the different types of foam concentrates with their induction ratio and application for liquid fires. 7
5. a) What are the compositions and types of dry chemical powder used in fire fighting? Explain suitability for Na-X powder and its application? 7
b) What are the methods of Dry chemical application to the hazards as per NFPA-10 and NFPA-17? Give a schematic block diagram for application methods. 7
6. Explain the foam based fire fighting systems base on : 14
i) Type of fuel
ii) Burning depth of fuel
iii) Size of fire
iv) Application rate and discharge time
7. a) Explain the extinguishing properties and thermodynamic properties of carbon-dioxide gas used in fire fighting. 7
b) Explain the chemical mechanism of Halon-1301 and Ozone with history of halogenated fire fighting agents. 7
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8. a) What are the two major categories of clean agent over replacement of Halon replacement? Explain the extinguishing mechanism of Halocarbon clean agents. 7
b) What is the minimum carbon-dioxide concentration for fire extinguishment in different type of hazards? Differentiate between minimum concentration and design concentration of carbon dioxide gas. 7