3 /31

0404N56

Candidate's Seat No :_____

B.Sc. F & S Semester-6 Examination

CC

Fire Safety Design

April-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Instruction : All questions carry seven (07) marks.

Q.no1(a)How many types of sprinkler systems are there, why it is called autosystem and Explain wet sprinkler system in details.

Q.no1(b)How many types of feed can be given to sprinkler.Describe each one with the help of diagram.

OR

1(a)Write down the names in the following categories of sprinklers

1.Types of sprinkler system

2.sprinklers according to its spray(head).

3.According to its operating principle

1(b)Give the temperature rating of bulb of orange, red,yellow , blue. In an ordinary hazard system installed, the room size is 45 feet x 30 feet ,How many sprinklers will be required, use formula A=SxL

Q.No2(a)write down names of five automatic fire detectors and principles of operation in brief.

Q.No2(b)Describe smoke detectors ,its types, and also explain light obscuration and light scattering principle with sketch.

OR

Q.No2(a)Write down types of heat detectors and explain rate of rise heat detector with the help of sketch.

Q.No2(b)Explain optical beam detector with the help of sketch ,where these detectors are used.

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Q.No3(a) Define smoke, products of combustion and describe the different methods of smoke management.

Q.No3(b)What are the forces responsible for smoke movement. Explain Stack effect and wind effect.How will you keep escape route clear.

OR

Q.No3(a)What is tactical ventilation, method of tactical ventilation and explain water fog assisted ventilation.

Q.No3(b) What do you understand by pressurization, how it helps in in smoke control .Draw sketch of stair case pressurization,

Q.No4(a)Write the names of various gases which can be used for extinguishing fire.Explain Co2 flooding system and its usage.

Q.No4(b)What are the extinguishing properties of DCP ,explain all the properties in brief and which is the most effectiveproperty.A room size 15feetx15feetx10feet requires to be protected by DCP total flooding system ,how much quantity of DCP will be needed.

OR

Q.No4(a)Explain DCP system ,types of dry chemical used,and physical properties of DCP.

Q.No4(b)Mention general properties of Co2 and extinguishing properties of Co2.A room having Gasoline 15 mtr long ,12mtr wide and 4 mtr high needs total flooding system of Co2 .Calculate the quantity of Co2 .

Q.No5. MCQ. Each carries one mark

1. Write full form of following inert gases

IG 01, IG 55, IG 541, IG 100.

2.KCL dry powder is also called purple, Super K, Triple K, none

3.Novec is also known as

FK-4-1-12, FK-5-1-11, FK-5-1-12, FK-5-1-13

4.One micron is equal to how much 1/1000, 1/10000, 1/100000 none

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5.NFPA code for Co2 systems is code10, code 11, code 12, code13.

6.In pre- action sprinkler system the pipe is charged with

Water, air, nitrogen, argon,

7.In which sprinkler system water can be used for other purpose

Treefed, grid fed, loopfed, end fed

8.Write down the signs of AND gate, OR gate

9. In formula $Q = k\sqrt{p}$ what is Q

10. Purple K is a dry chemical powder consisting of

Potassium chloride, potassium bi carbonate, potassium carbonate, potassium phosphate

11.Besides QBD there is another type of sprinkler head ,write down the name ---------

12.In order to improve pressure difference the chimney is colored with

Yellow, red, black, white

13. Co2 gas is heavy, lighter, same as air, none

14. A room size 20'x20'x10', is provided with a blower of capacity 12000cft/min ,how many air changes will take place per minute. 2, 3, 4, 5

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