

Seat No. : \_\_\_\_\_

# NH-109

December-2015

**B.Sc., (Fire & Safety) (Sem.-III)**

**CC-202 : Fire Protection Systems**

**Time : 3 Hours]**

**[Max. Marks : 70**

1. (a) What is included in active fire protection system & passive fire protection system ? Give requirement of ideal passive fire protection system. 7

**OR**

Explain in detail about fire proofing material & selection of right material for right application.

- (b) Describe portable fire extinguishers & based on fire classification A, B, C, D. What is material involved & types of extinguisher to be used ? 7

**OR**

List out the limitation of water type, CO<sub>2</sub> type & foam type extinguishers & mention importance of portable fire extinguisher.

2. (a) Describe fire hydrant system. What is the advantage of laying in ring main form ? In how many categories the occupancies based on hazards are divided ? 7

**OR**

Explain dry riser, wet riser & down comer. What are the basic requirement of dry riser ?

- (b) Write short notes on any **three** : 7

- (1) Fire pump room
- (2) Booster pump
- (3) Jockey pump
- (4) Damage to piping

**OR**

Why testing & inspection of fire hydrant is required ? Explain radiographic test & hydro test.

3. (a) Explain the working of fire sprinkler system, its use and what is wet pipe and dry pipe system of sprinklers. 7

**OR**

Describe water spray system, its objectives and types of spray systems.

- (b) Write down the function of deluge valve. How it operates and what is the meaning of deluge ? 7

**OR**

Write short notes on any **three** :

- (1) Mayura curtain
  - (2) Drenchers
  - (3) Fixed temperature rating of bulbs
  - (4) Upright sprinkler
  - (5) Pendant sprinkler
4. (a) Explain CO<sub>2</sub> extinguishing system (total flooding) give the list of items required. What are the other uses of CO<sub>2</sub> and general safety guide lines ? 7

**OR**

Explain FM 200 system, its benefits and also give physical and chemical properties of FM 200.

- (b) What is inergen system of fire extinguishing and what do you understand by IG 541 and also describe the disadvantages of inergen system. 7

**OR**

While giving an overview of dry chemical powder system, explain in detail its extinguishing properties.

5. Give appropriate answers : 14

- (1) In ancient time fire was used to
- |                        |               |
|------------------------|---------------|
| (a) fight wild animals | (b) cook food |
| (c) light source       | (d) all three |
- (2) As per TAC the area of wired glass opening shall not exceed
- |              |              |
|--------------|--------------|
| (a) 30 sq ft | (b) 40 sq ft |
| (c) 50 sq ft | (d) 60 sq ft |

- (3) The hose reel shall conform to IS specs
- (a) IS 880 (b) IS 882  
(c) IS 884 (d) IS 886
- (4) Minimum discharge of water from hose reel per minute shall be
- (a) 20 litre (b) 21 litre  
(c) 22 litre (d) 23 litre
- (5) The velocity in the fire hydrant line shall not exceed
- (a) 3 m/sec (b) 4 m/sec  
(c) 5 m/sec (d) 6 m/sec
- (6) For a total floor area of 1000 sq ft, the no. of hydrant should be
- (a) one (b) two  
(c) three (d) four
- (7) As per NBC rules, if two hydrants are provided on each floor, the dia. of riser should be
- (a) 80 mm (b) 100 mm  
(c) 150 mm (d) 200 mm
- (8) The radiographic isotope used for radiographic testing of weld joints produces rays
- (a) alpha (b) beta  
(c) gamma (d) none
- (9) This colored bulb operates at 93\*c
- (a) red (b) yellow  
(c) green (d) black
- (10) MVWS and HVWS both use which type of nozzle ?
- (a) Closed (b) Open  
(c) Blocked (d) Plugged
- (11) Carbon dioxide is not effective on
- (a) electrical fire (b) magnesium fire  
(c) oil fire (d) cable fire
- (12) In FM 200 case what is incorrect ?
- (a) Highly toxic (b) Non conductor  
(c) Quick acting (d) High shelf life

(13) Inergen contains the mixture of gases

- (a) oxygen
- (b) nitrogen
- (c) argon
- (d) carbon dioxide

(14) Which are the additives used to improve the quality of dry chemical powder ?

- (a) Metallic stearate
  - (b) Tricalcium phosphate
  - (c) Silicone
  - (d) All three
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