B.E. (Fire Engineering) Fifth Semester (C.B.S.)

Fire Protection - I

P. Pages : 2 **NIR/KW/18/3959**

Time : Three Hours * 1 7 9 5 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Diagrams and chemical equations should be given whenever necessary.
11. Illustrate your answers whenever necessary with the help of neat sketches.
12. Use of non programmable calculator is permitted.

1. Explain the case study of major chemical incident occurred at Bhopal-India in December 1984. Explain the occurrence, damages resulted, safety system by passed, root causes and lessons learnt. **13**

OR

2. Define fire protection? How will you evaluate fire safety objectives and develop performance criteria? **13**

3. What are factors considered from the angle of fire prevention or protection while selecting a site for chemical industry? Explain with suitable examples. **13**

OR

4. Illustrate different stages of fire in detail? Give a brief account of general sprinkler? Layout in any occupancy. **13**

5. What are fire walls? Describe types, material of construction and applications. What are fire Doors? Explain material of construction, activating mechanism and applications. **14**

OR

6. a) Explain fire resistant ratings with proper ranges and examples. **7**

b) Explain types of Building construction in relation to fire resistance rating. **7**

7. a) Define 'Smoke Aerosol'. Describe its characteristic, types and its impact on fire fighting operations. **7**

b) Describe the method of 'Heat & smoke roof venting' with examples. Which NFPA code deals with the calculation of venting of a building? **6**

OR

8.		What is the principle of smoke control? Describe influence of air flow in smoke control.	**13**
9.	a)	Explain the case study of fire to Sandoz chemical warehouse occurred at Basel, Switzerland in Nov. 1986.	**5**
	b)	As per insurance guidelines, describe the steps while designing 'Fire water system for 60 hydrants in a factory of 'ordinary Hazard' occupancy.	**9**

OR

10.		Describe different types of sprinklers. What is the operating principle of automatic sprinklers?	**14**
11.		What are the characteristics of fire signatures? Discuss with special reference to Aerosol Signatures.	**13**

OR

12.	a)	Explain the types of storage for 'food grains', fire hazards in such storage and fire protection measures for covering such risk.	**6**
	b)	Describe the fire risk in storage of 'Rubber Tyres'. What are the fire protection measures taken for such storage?	**7**

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