

**NC-854** Seat No. \_\_\_\_\_  
**First Year B. Sc. (Fire) Examination**  
April / May – 2003  
**Fundamental of Fire**

Time : 3 Hours]

[Total Marks : 70

- Instructions :** (1) **All** questions are **compulsory**.  
(2) Figures to the right indicate full marks of the question.  
(3) Assume suitable additional data that may be necessary.

- 1** (a) Write the class of fire and extinguishment media to be used in case of : **10**
- (i) Fire on lubricating oil
  - (ii) Electrical insulation material of a live electrical cable.
  - (iii) Tyres made of rubber kept in a godown
  - (iv) Leaking acetylene gas cylinder on fire
  - (v) Magnesium strips kept in a laboratory on fire.
- (b) Distinguish flashpoint to fire point. **2**
- (c) What will happen in case, water is poured on a kerosine fire ? **2**

**OR**

- 1** (a) Distinguish Fire Triangle to Fire Tetrahedron of fire. **6**
- (b) Write short notes on : **9**
- (1) Classification of fire
  - (2) Life cycle of fire
  - (3) Role of Oxygen in Combustion.

- 2** (a) Define and explain briefly : **8**
- (i) Coping
  - (ii) Bond
  - (iii) Bat
  - (iv) Closer.
- (b) Explain briefly any three parts of a super-structure. **6**

**OR**

- 2** (a) Distinguish brick masonry to stone masonry. And give your preference. **6**
- (b) Give classification of building based on occupancy according to "NBC of India 1970". Also explain each type briefly. **5**
- (c) Give short notes on Header and Parapet. **3**
- 3** (a) In relation to fire hazards explain the following briefly : **3**
- (i) Internal Hazard
  - (ii) Personal Hazard
  - (iii) Exposure Hazard.
- (b) Explain grading of occupancies based on fire load. **5**
- (c) Discuss colour change pattern of concrete on heating. **3**

**OR**

- 3** (a) What are the methods of protection of structure steel elements. **3**
- (b) Discuss in brief about passive and active fire protection system. **5**
- (c) Write the behaviour of Timber and Structural Steel on Fire. **6**

- 4** (a) Define the following : **6**
- (i) Means of escape
  - (ii) Occupant load
  - (iii) Travel distance.
- (b) In relation to stairways as means of escape write short notes on the following : **8**
- (i) Enclosure of stairways
  - (ii) Lobby approach strairways
  - (iii) Fire escape or external staircase
  - (vi) Doors in escape rote.

**OR**

- 4** (a) What are the general requirements of means of escape ? **6**
- (b) Write the escape route width and other specification of the following : **8**
- (i) Internal staircase
  - (ii) Doorway.
- 5** (a) Explain the basic goals of fire safety organisation Department. And write the objectives of Fire Suppression Division. **7**
- (b) Briefly explain the difference between Private and Public fire protection. **7**

**OR**

- 5** Write short notes on :
- (a) Responsibility of Fire Prevention Division **5**
  - (b) Responsibility of Fire Maintenance Division. **5**
  - (c) Typical organisation structure of Small Fire Organisation. **4**