

**POST GRADUATE DIPLOMA IN FIRE SAFETY  
AND DISASTER MANAGEMENT  
(PGDFSTYDM)**

**Term-End Examination 00036**

**June, 2012**

**MSE-009 : FIRE SERVICE OPERATION**

*Time : 3 hours*

*Maximum Marks : 100*

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- Note : (i) Question No. 1 is compulsory.  
(ii) Attempt any four questions from remaining.*
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**1. (A) Tick the correct answer : 10x2=20**

(a) Which dry powder is most suitable for high temperature metal fires ?

- (i) Potassium bi - carbonate
- (ii) Mono - ammonium Phosphate
- (iii) Graphite base
- (iv) Sodium bi - Carbonate

(b) Which additive in dry powders make them water repellent ?

- (i) Metallic Stearate
- (ii) Magnesium Carbonate
- (iii) Silica
- (iv) Tri - Calcium Phosphate

- (c) Which foam compound can be used in Low, Medium and High Expansion ?
- (i) Protein base
  - (ii) AFFF
  - (iii) Synthetic
  - (iv) Alcohol resistant
- (d) Why water is best cooling agent ?
- (i) Due to Specific Heat
  - (ii) Due to Critical Temp
  - (iii) Due Latent Heat of Vapourisation
  - (iv) Due to very high Heat of Decomposition
- (e) Which extinguishing agents have been found to have O.D.P ?
- (i)  $\text{CO}_2$
  - (ii) Halous
  - (iii) Dry Powder
  - (iv) Foams
- (f) What should be Slope in Fire Station garrage ?
- (i) 1 : 50
  - (ii) 1 : 100
  - (iii) 1 : 150
  - (iv) 1 : 200
- (g) What is upper limit of flammability of L.P.G ?
- (i) 1.5%
  - (ii) 2.5%
  - (iii) 9%
  - (iv) 9.5%

- (h) Wind direction at a major Fun Incident Location is from East to West. Which direction should never be used for positioning equipment ?
- (i) East           (ii) West  
(iii) North       (iv) South
- (i) Which of plastics given in question is thermoplastic ?
- (i) Phenolics  
(ii) Epoxin  
(iii) Melamine  
(iv) PVC
- (j) What is maximum size of metal particles to be called as metallic dust ?
- (i) 50 microns  
(ii) 100 microns  
(iii) 250 microns  
(iv) 500 microns

1. (B) Fill in the blanks : 2x10=20

- (a) The ratio between foam solution and foam is known as \_\_\_\_\_
- (b) The ideal expansion of low expansion foam is \_\_\_\_\_
- (c) Unburnt hot gases bursting into flames on opening of door is known as \_\_\_\_\_
- (d) Plastics which cannot be reshaped or re - moulded are called \_\_\_\_\_

- (e) Oxygen in liquid state will expand \_\_\_\_\_ times when converts into gas.
- (f) \_\_\_\_\_ book is maintained by control room incharge for all emergencies.
- (g) CO<sub>2</sub> extinguisher when applied without horn will give \_\_\_\_\_ effect.
- (h) The percentage of propane gas in L.P.G is \_\_\_\_\_
- (i) \_\_\_\_\_ is first activity before commencing rescue from sewer.
- (j) Any cordage with more than one Inch circumference is known as \_\_\_\_\_

2. How dry powders extinguish fires ? How many types of dry chemical powders, used for Fire Fighting, are known to you ? Give details of their use and limitations. 15

3. (a) What are "Cryogenic material" and risks associated with these materials ? 8

(b) Describe Fire Prevention and Fire Fighting method to be adopted in Cryogenic material incidents. 7

4. Write short notes on *any three* of the following : 3x5=15
- (a) Rescue is Darkness
  - (b) Potential hazards in sewer rescue
  - (c) Safety features of aluminium Extension ladder
  - (d) Thermoset Plastic
  - (e) Drying oils and their hazards
5. You are Incharge of a Fire Safety team for large ware house terminal Prepare an emergency procedure, should a large fire incident take place with arrangement for casualties care. 15
6. Prepare a fire service routine from 0600 Hr to 1700 Hr. Give justification for the activities and their timings. Do not overlook human factor consideration 15
7. (a) Spontaneous heating is one of the reason in Coal - stack fires. Give reason and preventive measure to be adopted. 8
- (b) List out the Knots and Lines and give their utility. 7
8. Paints pose high risk to Fire Fighter in case a container godown is on fire. State the reason, causes of fire in paint storage and Fire Fighting method. 15
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