

00599

**CERTIFICATE IN RESCUE AND FIRE
FIGHTING (CRFF)**

Term-End Examination

December, 2010

**BAV-007 : FIRE ENGINEERING SCIENCE AND
EQUIPMENTS**

Time : 3 hours

Maximum Marks : 100

*Note : All questions carry equal marks. Answer any five
questions only.*

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1. Expand the following : 5
- (a) (i) SCBA (ii) SFAC
(iii) BCF (iv) ODP
(v) BLEVE
- (b) (i) Combustion is a _____ reaction. 5
(ii) LPG is _____ than air.
(iii) Atmospheric Air contains _____
% of oxygen.
(iv) Fahrenheit is a unit of _____ .
(v) _____ is a Toxic gas produced
during fire.
- (c) Define flash point. Write flash points of 4 5
known liquids.
- (d) Explain the methods of Heat Transfer. 5

2. Write short notes on the following : 20
- (a) Flammability range
 - (b) Spontaneous combustion
 - (c) BLEVE
 - (d) Latent Heat
 - (e) Boyle's and Charles's law.
3. (a) What are the common causes of Electrical fires ? Explain each and suggest the preventive measures to reduce electrical fire. 10
- (b) Write the difference between temperature and heat. Calculate the temperature of boiling water in Fahrenheit scale, by converting from Celsius scale. 10
4. (a) With the help of fire tetrahedron, explain : 10
- (i) Combustion (ii) Extinction
 - (iii) Media (iv) Inhibition
- (b) (i) Write the effect of pressure on water kept in a container (Principle characteristics) 5
- (ii) Find the quantity of water in a pond of size 50 mts. x 30 mts. in size, and plain level bottom of 3 mts. height filled $\frac{3}{4}$ of water. 5

5. (a) How hoses are classified ? What are the characteristics of delivery hose and a suction hose ? 10
- (b) What are the common small gears used in fire service ? Explain about 5 small gears. 10
6. (a) Why water is considered as the best media of extinction ? Explain the characteristics of water pumping through pipe line. 10
- (b) What are the media and extinction methods used for gas fires ? Briefly discuss with examples. 10
7. Write short notes on : 20
- (a) AFFF
- (b) Alcohol Resistant foam
- (c) Foam expansion
- (d) Foam marking equipments
- (e) CO₂ extinguisher
8. (a) What do you mean by automatic sprinkler ? Explain the functioning with the help of sketch. Also explain the difference between sprinkler and drencher. 10
- (b) What are the materials used for Aircraft constructions ? Briefly explains about four. 10