

QUESTION 1 - Fire Extinguishers

1.1 For the following types of portable fire extinguishers, state:

- i. the principle of extinguishment involved;**
- ii. the classes of fire for which they are most suitable;**
- iii. hazards to operators (if any); and**
- iv. possible disadvantages.**

A. Dry Powder

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B. Water

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C. Foam

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D. Carbon Dioxide

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1.2 In relation to extinguishers for Class F fires, explain the term 'Saponification'

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QUESTION 2 - Foam

Define the following terms in relation to firefighting foam.

A. Expansion ratio

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B. Produced foam

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C. Fire tetrahedron

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D. Foam concentrate

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E. Aspirated

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F. Foam proportion rate

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G. Foam solution

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H. Pre-treat

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I. Scrubbing

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J. Slugging

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QUESTION 3 - Uniform and Personal Protective Clothing

3.1 There are two types of Gas Suits with Breathing Apparatus (formerly known as Level 4 PPE) currently in use with the New Zealand Fire Service, Totally encapsulated and Non-encapsulating.

Describe the difference between the types.

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3.2 Complete the following true/false statements:

Chemical Splash Suits with Breathing Apparatus (formerly known as Level 3 PPE)

A. May be worn at fire incidents involving a significant heat hazard providing exposure to heat is minimized.

	True
	False

B. Must be worn over Structural Firefighting Uniform (formerly known as Level 2 PPE) at a Hazmat incident-

	True
	False

C. May be worn over working rig (formerly known as Level 1 PPE) at the wearers discretion.

	True
	False

Structural Firefighting Uniform

A. Should be worn by fire suppression crew at motor vehicle accidents

	True
	False

B. Is optional at vegetation fires where there is significant exposure to heat.

	True
	False

3.3 What are the inspection requirements for a New Zealand Fire Service approved Fire Helmet?

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3.4 What is the testing schedule for a Chemical Splash suit?

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3.5 In the 'Operational Requirements Manual', there is a requirement for four (4) types of glove.

List them:

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QUESTION 4 – PUMPS

a) As portable pump operator operating from static supply, you notice your compound gauge is indicating an increase in vacuum. List 3 likely reasons for this and detail how you would correct the problem. **(12 marks)**

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b) When conducting a vacuum test on a Millenium pump, the primer must not be operated for more than 'x' seconds. **(2 marks)**

What value is 'x'?

c) When conducting a vacuum test on an appliance pump, the primer must not be operated for more than 'x' seconds. **(2 marks)**

What value is 'x'?

- d) List the Personal Protective Equipment that a pump operator should use during pumping operations. **(4 marks)**

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QUESTION 5 – PUMPS

- a) What pressure does the New Zealand Fire Service charge a dry riser to during operation at a fire? **(1 mark)**

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- b) Which of the following pump types is not a primer?
Reciprocating, Centrifugal, Exhaust ejector, Diaphragm **(1 mark)**

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- c) By means of a diagram draw a cross sectional profile of a 'A' Type ejector pump, clearly indicating the functional parts and the direction of flow. **(6 marks)**

d) Explain exhaust ejector primers in theory. Detail the practical use of an exhaust ejector primer **(6 marks)**

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e) There are 11 tasks associated with recommissioning a pumping appliance after use at an incident. The first is supplied, list the other ten. **(6 marks)**

- Flush the tank after using contaminated water
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QUESTION 6 – Hose

a) State the length, maximum working pressure, and coupling type of the following hoses: **(9 marks)**

- (i) 25mm hose reel tubing.....
- (ii) 41mm preconnect/forestry.....
- (iii) 90mm hose.....

b) Detail the procedure for testing Fire Service delivery hose. **(11 marks)**

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