

**L3D2**



**THE INSTITUTION OF FIRE ENGINEERS**  
Founded 1918 • Incorporated 1924

**IFE Level 3 Diploma in Fire Science and Fire Safety**

**Unit 2: Fire Safety (F/505/6006)**

**Thursday 14 March 2019**

**10.30 – 13.30**

**Instructions to Candidates**

1. The time allowed for this examination is **THREE** hours.
2. Candidates must answer **SIX** questions from the total of **EIGHT** questions set for this examination.
3. All questions carry equal marks and may be answered in any order. Candidates should follow the instructions provided in the question when composing their answers.
4. Candidates should record all of their answers in the answer book provided.
5. The question paper must be handed in with the answer book.

### Question 1

- a) Prepare a checklist of fire safety issues to be covered in the training of staff working in a large factory or warehouse premises. (14 marks)
- b) Staff who are expected to undertake the role of fire marshals or fire wardens are given a higher level of fire safety training than the average member of staff in order for them to be responsible for the fire safety within a designated part of a premises. Outline what would be covered in this higher level of fire safety training. (6 marks)
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### Question 2

- a) State the objectives of fire safety advice provided for property and business continuity purposes. (2 marks)
- b) Outline the primary means of achieving those objectives in order to improve property and business continuity protection. (6 marks)
- c) State five factors that influence an evacuation strategy for a building. (5 marks)
- d)
- i) Identify two human behavioural factors that should be considered when planning evacuation and means of escape from a building. (2 marks)
- ii) Describe five ways in which building design and evacuation strategies can assist in aiding evacuation. (5 marks)
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### Question 3

- a) Explain why fires that have been set deliberately can often be more dangerous and extensive than accidental ones. (7 marks)
- b) You have been asked to assist a local business to draw up a plan to protect their factory from potential arson attacks. Describe the measures you would suggest putting in place to protect the premises from a deliberate fire. (13 marks)
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#### Question 4

Explain how each of the following extinguishers put out a fire, state where they are best used and any hazards associated with their use:

- a) Water Mist (6 marks)
  - b) Foam (4 marks)
  - c) CO<sub>2</sub> (4 marks)
  - d) Powder (6 marks)
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#### Question 5

- a) Explain the following terms:
    - i) inner room
    - ii) access room (2 marks)
  - b)
    - i) State the specific risk that an inner room presents in the event of fire. (1 mark)
    - ii) Identify three arrangements that can be put in place to reduce the risk and explain how each arrangement helps to reduce the risk. (6 marks)
  - c)
    - i) Explain the term 'dead end'. (1 mark)
    - ii) Identify and explain the measures that can be taken to reduce the hazards and risks of dead ends. (10 marks)
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**[Please turn over]**

### Question 6

a) Describe the design and purpose of a wet rising main. (16 marks)

b) Describe how these systems are typically tested on an annual basis. (4 marks)

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### Question 7

a) State the benefits that can be obtained from installing a wireless fire alarm system. (10 marks)

b) Explain the problems that can be associated with these systems. (3 marks)

c) State where manual call points would normally be located in a building. (4 marks)

d) Many fire alarm systems will include control and indicating equipment (a fire alarm panel). State the three main functions of these systems. (3 marks)

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### Question 8

a) State the main purposes of a smoke ventilation system in a building. (4 marks)

b) Describe the component parts of a typical smoke ventilation system. (7 marks)

c) Describe how the system would operate in the event of a fire. (7 marks)

d) Identify two types of building where a smoke ventilation system may be installed. (2 marks)

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