

L4C2



THE INSTITUTION OF FIRE ENGINEERS
Founded 1918 • Incorporated 1924

IFE Level 4 Certificate in Fire Science and Fire Safety

Unit 2: Fire Safety (D/505/5932)

Friday 9 March 2018

14:30 – 17:30

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 responses.
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) Using a diagram, specify the elements of ASET/RSET. (12 marks)

b) Explain the human behaviours which can affect 'pre-movement time'. (8 marks)

Question 2

Explain the general design principles of smoke control and ventilation systems that may be used in a shopping mall.

(20 marks)

Question 3

In relation to a tall multi-occupied office building, explain the practical difficulties relevant to disabled refugees from the perspective of building management and disabled users.

(20 marks)

Question 4

A qualitative design review (QDR) is the initial stage of any engineering design where the basic parameters are established and the scope and objectives of the fire strategy are defined.

Explain the formal process of QDR.

(20 marks)

Question 5

You have been asked to advise the planning committee for a very popular international sporting event in an indoor arena. Explain the special fire safety challenges that such an event presents.

(20 marks)

Question 6

You have been asked to carry out a review following a recent fire in a factory. The incident you are being asked to review was as follows:

A fire in an extraction system serving an area of hot works in a large factory ignited the core of metal sandwich panels where the ducting passes through the wall. The fire spread around the perimeter of the building and badly damaged the contents of the warehouse section. The production area was protected by sprinklers and was back in use after a few days.

Explain the fire safety matters that you would consider as part of the review.

(20 marks)

Question 7

Describe three different types of gaseous fire suppression systems and explain their advantages and disadvantages for different situations.

(20 marks)

Question 8

The plan provided shows a single storey factory with mezzanine floor and two storey offices. A fire warning system and an escape lighting system have been fitted. Portable firefighting equipment and exit signage have been provided. The factory is normal risk with 500 workers on the factory floor and 50 workers in the office section.

Referring to the plan, identify four fire safety problems. For each problem, provide an explanation of the issues, identify a solution and explain how your solution solves that problem.

(20 marks)
