

L3D4



THE INSTITUTION OF FIRE ENGINEERS
Founded 1918 • Incorporated 1924

IFE Level 3 Diploma in Fire Science and Fire Safety

Unit 4: Aviation Fire Operations (R/505/6009)

Thursday 14 March 2019

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 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

Describe the construction features (materials and components) of small commercial helicopters and explain how these present hazards and risks to Airport Rescue and Firefighting Services (ARFFS) crews when dealing with an accident on an airfield.

(20 marks)

Question 2

a) It is essential that cordons are put in place as soon as possible at an aircraft accident site. Detail the considerations when setting up Inner and Outer Cordons.

(14 marks)

b) Describe the considerations when managing access through cordons to the scene of the incident.

(6 marks)

Question 3

a) Describe the hazards faced by Airport Rescue and Firefighting Services (ARFFS) crews in attending an on-airfield engine fire and describe the control measures to be employed when dealing with this type of incident.

(14 Marks)

b) Identify and describe three different types of jet engine currently in use.

(6 marks)

Question 4

a) Produce a table to illustrate the Airport Rescue and Firefighting categories from Category 1 to Category 10.

(10 marks)

b) Identify the key considerations for Airport Rescue and Firefighting Services (ARFFS) crews when responding to an aircraft accident on the airfield.

(10 marks)

Question 5

Polymer Composite Materials/Man Made Mineral Fibres (MMMFs) are used extensively in the construction of modern aircraft.

- a) Describe the hazards to Airport Rescue and Firefighting Services (ARFFS) crews when responding to an aircraft accident involving an aircraft known to have composites within its construction.

(12 marks)

- b) Describe the control measures to be implemented both during and post-incident when MMMFs are present.

(8 marks)

Question 6

- a) High-speed accidents off-airport can generate additional hazards and increase the risks to Airport Rescue and Firefighting Services (ARFFS) crews when responding. Describe the hazards associated with this type of incident.

(10 Marks)

- b) Describe the considerations relevant to scene preservation and the actions to be taken.

(10 marks)

Question 7

Describe four different types of fuel tanks found in aircraft.

(20 marks)

Question 8

Describe in detail the operation of doors and evacuation systems on commercial aircraft and explain the implications for Airport Rescue and Firefighting Services (ARFFS) crews attending incidents involving these aircraft.

(20 marks)
