

L3D4



THE INSTITUTION OF FIRE ENGINEERS
Founded 1918 • Incorporated 1924

IFE Level 3 Diploma in Fire Science and Fire Safety (VRQ)

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

Thursday 16 March 2017

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

a) Jet engine fires most commonly occur in the accessories section of the engine. Briefly describe the location of the accessory section and identify the components that can be found within it.

(6 marks)

b) Detail the hazards and risks to Airport Rescue and Firefighting Services (ARFFS) crews when dealing with jet engine fires and describe the control measures that you would put in place.

(14 marks)

Question 2

a) Identify the various fuel storage and distribution systems to be found at civil airports.

(5 marks)

b) Identify three different types of fuels used in commercial aviation. Describe the use and characteristics of each type of fuel.

(15 marks)

Question 3

a) With regard to helicopters, describe the main features, use and hazards associated with:

i) flotation devices

(7 marks)

ii) automatic deployable emergency locator transmitters (ADELT)

(8 marks)

b) Explain the categorisation of heliports.

(5 marks)

Question 4

a) Outline the hazards and risks faced by the Airport Rescue and Firefighting Services (ARFFS) when responding to a “High Speed” off-airfield incident.

(10 marks)

b) Following an incident of this type, an investigation will be required. Identify the issues to be considered by the Incident Commander when managing the incident in order to enable a full investigation to take place.

(10 marks)

Question 5

a) Describe the considerations of an Incident Commander when approaching an aircraft incident.

(12 marks)

b) Explain the purpose and use of cordons and describe the considerations when establishing inner and outer cordons at an aircraft accident.

(8 marks)

Question 6

a) Describe the function of a Rendezvous Point (RVP) at a commercial airport and describe the facilities which should be provided.

(10 marks)

b) Detailed local plans should be prepared and available to enable responses to incidents at an airport. Outline the information which should be included in these plans.

(10 marks)

Question 7

a) Describe the design features found in civilian cargo aircraft and explain the hazards these may pose to the Airport Rescue and Firefighting Services (ARFFS).

(8 marks)

b) At any aircraft incident the early identification of any cargo carried is very important in managing the incident safely. Explain the methods of cargo identification and verification available to the incident commander.

(4 marks)

c) Describe the hazard labels (including the colour) used to classify the following types of dangerous goods. You may use diagrams to support your response.

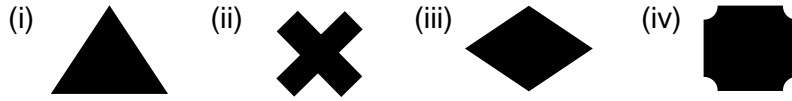
- i) Flammable Solid
- ii) Oxidiser
- iii) Dangerous When Wet
- iv) Explosives Division 1.6

(8 marks)

[Please turn over]

Question 8

a) Identify the symbols depicted below as seen on military aircraft.



(4 marks)

b) Describe in detail the “defence suites” which may be found on some military aircraft types and explain the hazards associated with them.

(16 marks)
