



THE INSTITUTION OF FIRE ENGINEERS
Founded 1918 • Incorporated 1924

IFE Level 2 Certificate in Fire Science, Operations and Safety R/505/5748

SAMPLE QUESTIONS AND INFORMATION FOR CANDIDATES

Introduction

This document has been provided to aid candidates in their preparation for the IFE Level 2 Certificate in Fire Science, Operations and Safety examination. The document is in two parts:

Part 1: A selection of sample questions mapped to the syllabus.

Part 2: A copy of the front cover of the examination paper and a sample section of the answer sheet, enabling candidates to familiarise themselves with the instructions for responding to the examination paper.

Part One - Sample Questions

General information

The syllabus for the IFE Level 2 Certificate in Fire Science, Operations and Safety is divided into three sections:

- Fire Engineering Science
- Fire Operations
- Fire Safety

The examination takes the form of one written three-hour examination. It contains 120 multiple choice questions and is divided into three sections, reflecting the three sub-sections of the syllabus. The Fire Engineering Science and Fire Operations sections of the paper each contain 45 questions and the Fire Safety section contains 30 questions.

Section 1 - Fire Engineering Science

Calculate the capacity in litres of a circular tank 15 metres in diameter and 3 metres in depth.

- a) 353,430 litres
- b) 530,145 litres (Ans)
- c) 540,000 litres
- d) 706, 860 litres

Syllabus Reference: Section 1, 1.3

The temperature at which a solid changes into a liquid is known as the:

- a) freezing point
- b) melting point (Ans)
- c) latent temperature
- d) specific temperature

Syllabus Reference: Section 1, 2.1

Calculate the momentum of a 2kg object travelling at 10 m/s.

- a) 5 kg.m/s
- b) 10 kg.m/s
- c) 20 kg.m/s (Ans)
- d) 25 kg.m/s

Syllabus Reference: Section 1, 3.1

The SI unit used to measure heat is the:

- a) British Thermal Unit
- b) Calorie
- c) Therm
- d) Joule (Ans)

Syllabus Reference: Section 1, 4.2

Complete the following statement. The _____ of an atom is the number of chemical bonds the atom or group of atoms will form.

- a) atomic number
- b) proton number
- c) valency (Ans)
- d) mass

Syllabus Reference: Section 1, 5.1

The chemical symbol for Phosphorous Pentoxide is PO_5 . A molecule of Phosphorous Pentoxide contains one atom of Phosphorous. How many atoms of Oxygen does it contain?

- a) 1
- b) 3
- c) 5 (Ans)
- d) 6

Syllabus Reference: Section 1, 5.2

The resistance of an electrical circuit is measured in:

- a) volts
- b) amps
- c) ohms (Ans)
- d) watts

Syllabus Reference: Section 1, 6.1

Section 2 – Fire Operations

The term commonly used to describe the continuing risk assessment process carried out in a changing environment is known as:

- a) incident command
- b) hazard identification
- c) dynamic risk assessment (Ans)
- d) environmental risk elimination

[Syllabus Reference: Section 2, 1.1](#)

If people are reported trapped in smoke in a domestic premises fire and nobody can be seen, the officer in charge should firstly:

- a) request fire control to mobilise additional resources
- b) establish the layout of the premises and any associated risks
- c) arrange for the premises to be ventilated to release the smoke
- d) organise a thorough search by firefighters in breathing apparatus (Ans)

[Syllabus Reference: Section 2, 2.1](#)

Centrifugal pumps are operated by means of an impeller which:

- a) collects the water supply from the periphery and discharges it from the centre
- b) receives the water supply from the centre and discharges it from the periphery (Ans)
- c) changes potential energy into velocity energy
- d) changes kinetic energy into potential energy

[Syllabus Reference: Section 2, 9.1](#)

Which one of the following foam concentrates is particularly suitable for use on fires involving 'Polar solvents'?

- a) Protein
- b) Synthetic
- c) Alcohol-resistant (Ans)
- d) Fluoroprotein

[Syllabus Reference: Section 2, 9.8](#)

Section 3 - Fire Safety

The distance people need to go to escape from a building (the travel distance) should be as short as possible. The travel distance should be measured from the:

- a) centre point of a room to a final exit from a building
- b) exit door of a room to a final exit from a building
- c) farthest point in a protected corridor to a protected stairway or final exit from a building
- d) farthest point in a room to the door to a protected stairway or final exit from a building (Ans)

[Syllabus Reference: Section 3, 2.1](#)

Sprinkler heads are spaced in a building so that the discharge:

- a) minimises any water damage
- b) from any two overlaps (Ans)
- c) forms a spherical pattern
- d) forms a paraboloid pattern

[Syllabus Reference: Section 3, 4.1](#)

Part Two - Examination Paper Instructions and Answer Sheet

Instructions for candidates undertaking the examination are provided on the front cover of the question paper (see below) and should be read carefully.

Candidates must provide their answers on the separate answer sheet provided - a copy of a section of the answer sheet is also provided below to enable candidates to see how the answer sheet is formatted.



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SAMPLE EXAMINATION PAPER FRONT COVER

Instructions to Candidates

1. The time allowed for this examination is **three hours**.
2. You must mark all of your answers **on the answer sheet** provided.
3. Write your **Centre Number** and **Candidate Number** in the correct spaces at the top of the answer sheet.
4. This examination has 120 questions, **all** of which must be attempted. Each question offers a choice of four possible answers but there is only **one correct answer** to each question.
5. Marks will not be awarded for questions where more than one answer is given.
6. You must use a **pencil** to complete the answer sheet.
7. For each question, indicate your answer by **striking it through** like this: **1 [a] [b] {c} [d]**. Please do not indicate your answers with ticks, crosses or circles.
8. If you make a mistake, or you change your mind about an answer, erase the first pencil mark completely and then indicate your new answer.
9. Any blank pages in this booklet may be used for working out answers to the calculation questions. Please do not use the answer sheet for this purpose.
10. At the end of the examination, the question paper and the answer sheet will be collected by the invigilators. You will not be allowed to keep the question paper.

IFE LEVEL 2 CERTIFICATE IN FIRE SCIENCE, OPERATIONS AND SAFETY

SAMPLE ANSWER SHEET SECTION

CENTRE NUMBER

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CANDIDATE NUMBER

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**SECTION 1:
FIRE ENGINEERING**

- 1 [a] [b] [c] [d]
- 2 [a] [b] [c] [d]
- 3 [a] [b] [c] [d]
- 4 [a] [b] [c] [d]
- 5 [a] [b] [c] [d]

- 6 [a] [b] [c] [d]
- 7 [a] [b] [c] [d]
- 8 [a] [b] [c] [d]
- 9 [a] [b] [c] [d]
- 10 [a] [b] [c] [d]

- 11 [a] [b] [c] [d]
- 12 [a] [b] [c] [d]
- 13 [a] [b] [c] [d]
- 14 [a] [b] [c] [d]
- 15 [a] [b] [c] [d]

- 16 [a] [b] [c] [d]
- 17 [a] [b] [c] [d]
- 18 [a] [b] [c] [d]
- 19 [a] [b] [c] [d]
- 20 [a] [b] [c] [d]

- 21 [a] [b] [c] [d]
- 22 [a] [b] [c] [d]
- 23 [a] [b] [c] [d]
- 24 [a] [b] [c] [d]
- 25 [a] [b] [c] [d]

- 26 [a] [b] [c] [d]
- 27 [a] [b] [c] [d]
- 28 [a] [b] [c] [d]
- 29 [a] [b] [c] [d]
- 30 [a] [b] [c] [d]

- 31 [a] [b] [c] [d]
- 32 [a] [b] [c] [d]
- 33 [a] [b] [c] [d]
- 34 [a] [b] [c] [d]
- 35 [a] [b] [c] [d]

- 36 [a] [b] [c] [d]
- 37 [a] [b] [c] [d]
- 38 [a] [b] [c] [d]
- 39 [a] [b] [c] [d]
- 40 [a] [b] [c] [d]

- 41 [a] [b] [c] [d]
- 42 [a] [b] [c] [d]
- 43 [a] [b] [c] [d]
- 44 [a] [b] [c] [d]
- 45 [a] [b] [c] [d]

Score:

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**SECTION 2:
FIRE OPERATIONS**

- 46 [a] [b] [c] [d]
- 47 [a] [b] [c] [d]
- 48 [a] [b] [c] [d]
- 49 [a] [b] [c] [d]
- 50 [a] [b] [c] [d]

- 51 [a] [b] [c] [d]
- 52 [a] [b] [c] [d]
- 53 [a] [b] [c] [d]
- 54 [a] [b] [c] [d]
- 55 [a] [b] [c] [d]

- 56 [a] [b] [c] [d]
- 57 [a] [b] [c] [d]
- 58 [a] [b] [c] [d]
- 59 [a] [b] [c] [d]
- 60 [a] [b] [c] [d]

- 61 [a] [b] [c] [d]
- 62 [a] [b] [c] [d]
- 63 [a] [b] [c] [d]
- 64 [a] [b] [c] [d]
- 65 [a] [b] [c] [d]