

Example question paper and Examiners' feedback on expected answers (FC1)



Example question paper and Examiners' feedback on expected answers

NEBOSH NATIONAL CERTIFICATE IN FIRE SAFETY AND RISK MANAGEMENT

UNIT FC1: FIRE SAFETY AND RISK MANAGEMENT



CONTENTS

Introduction	2
General comments	3
Comments on individual questions	5

Introduction

NEBOSH (The National Examination Board in Occupational Safety and Health) was formed in 1979 as an independent examining board and awarding body with charitable status. We offer a comprehensive range of globally-recognised, vocationally-related qualifications designed to meet the health, safety, environmental and risk management needs of all places of work in both the private and public sectors.

Courses leading to NEBOSH qualifications attract around 50,000 candidates annually and are offered by over 600 course providers, with exams taken in over 120 countries around the world. Our qualifications are recognised by the relevant professional membership bodies including the Institution of Occupational Safety and Health (IOSH) and the International Institute of Risk and Safety Management (IIRSM).

NEBOSH is an awarding body that applies best practice setting, assessment and marking and applies to Scottish Qualifications Authority (SQA) regulatory requirements.

This report provides guidance for candidates which it is hoped will be useful to candidates and tutors in preparation for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content and the application of assessment criteria.

© NEBOSH 2015

Any enquiries about this report publication should be addressed to:

NEBOSH
Dominus Way
Meridian Business Park
Leicester
LE19 1QW

tel: 0116 263 4700
fax: 0116 282 4000
email: info@nebosh.org.uk

General comments

Many candidates are well prepared for this unit assessment and provide comprehensive and relevant answers in response to the demands of the question paper. This includes the ability to demonstrate understanding of knowledge by applying it to workplace situations.

There are always some candidates, however, who appear to be unprepared for the unit assessment and who show both a lack of knowledge of the syllabus content and a lack of understanding of how key concepts should be applied to workplace situations.

Course providers and candidates will benefit from use of the “Guide to the NEBOSH National Certificate in Fire Safety and Risk Management” which is available via the NEBOSH website. In particular, the Guide sets out in detail the syllabus content for Unit FC1 and tutor reference documents for each Element.

Some candidates may over rely on knowledge of health and safety gained through their own work experience. While practical experiences can sometimes be helpful they are not a substitute for tuition and study of the syllabus content, to the breadth and depth indicated in the Guide referred to above.

In order to meet the pass standard for this assessment, acquisition of knowledge and understanding across the syllabus are prerequisites. However, candidates need to demonstrate their knowledge and understanding in answering the questions set. Referral of candidates in this unit is invariably because they are unable to write a full, well-informed answer to one or more of the questions asked.

Some candidates find it difficult to relate their learning to the questions and as a result offer responses reliant on recalled knowledge and conjecture and fail to demonstrate a sufficient degree of understanding. Candidates should prepare themselves for this vocational examination by ensuring their understanding, not rote-learning pre-prepared answers.

Candidates should therefore note this Report has not been written to provide ‘sample answers’ but to give examples of what Examiners are expecting and more specifically to highlight areas of underperformance.

Common weaknesses and suggestions to assist providers and candidates

It is recognised that many candidates are well prepared for their assessments. However, recurrent issues, as outlined below, continue to prevent some candidates reaching their full potential in the assessment.

Weakness in examination technique

- Many candidates fail to apply the basic principles of examination technique and for some candidates this means the difference between a pass and a referral.
- Candidates need to plan their time effectively. Some candidates fail to make good use of their time and give excessive detail in some answers leaving insufficient time to address all of the questions.
- In some instances, candidates do not attempt all the required questions or are failing to provide complete answers. Candidates are advised to always attempt an answer to a question even when the question is on an unfamiliar topic. At the risk of stating the obvious, an unattempted question will gain no marks. Questions or parts of questions missed can also indicate a weakness in time management.
- Some candidates fail to answer the question set and instead provide information that may be relevant to the topic but is irrelevant to the question and cannot therefore be awarded marks.

- Some candidates fail to separate their answers into the different sub-sections of the questions. These candidates could gain marks for the different sections if they clearly indicated which part of the question they were answering (by using the numbering from the question in their answer, for example). Structuring their answers to address the different parts of the question can also help in logically drawing out the points to be made in response.

Candidates benefit from the chance to practice answering questions in examination like conditions. This should assist them to become familiar with the need to read questions carefully, consider, plan their answer and then begin to write. By examination like conditions, practicing their answers within appropriate time limits should help candidates with time management within the examination.

Feedback to candidates on their answers to questions is a key part of these practice activities.

Lack of attention to command word

- Many candidates fail to apply the command words (eg describe, outline, etc). Command words are the instructions that guide the candidate on the depth of answer required. If, for instance, a question asks the candidate to 'describe' something, then few marks will be awarded to an answer that is an outline. Similarly, the command word 'outline' requires more information than a list.
- The most common weakness is the provision of too little content in an answer to meet the requirement of the command word. This is an unfortunate error as it can mean that a candidate, who knows the topic, and correct points to include in their answer, misses out on marks.

There is good guidance available to candidates and providers "Guidance on command words and question papers" which can be accessed on the NEBOSH website. This guidance will assist candidates to see and understand what is required in an answer when the different command words are used in questions. Some candidates miss out on marks by spending too long writing about one or two points when the answer requires more points to be covered. The chance to practice questions with a range of command words and to receive feedback on the quality of their answers will benefit candidates.

Failing to read the question/memorising answers

- Some candidates appear to have answered a question they hoped to see in the question paper rather than the question actually asked. This error can lead to all the available marks for a question being missed which can significantly impact on the likelihood of achieving the pass standard.

Other weaknesses observed

- Candidates should also be aware of the need to make their handwriting as legible as possible.
- Candidates should note that it is not necessary to start a new page in their answer booklet for each section of a question.
- Candidates do not need to write the question out before answering it, they just need to indicate in the top right hand corner of the page which question is being answered. In some cases valuable time is lost doing this rather than focusing on the answer needed.

Unit FC1

Fire safety and risk management

Question 1	(a)	Outline issues that should be considered when carrying out a fire risk assessment.	(10)
	(b)	Outline the principles of prevention that must be applied when deciding on appropriate control measures to minimise the risk from fire.	(8)
	(c)	Identify circumstances that would require the significant findings of a fire risk assessment to be recorded.	(2)

In answer to part (a) Examiners are looking for the fire-related issues that an assessor should be considering while undertaking a fire risk assessment. This would include issues such as any sources of ignition, fuel and oxygen that may be present, who may be at risk in the area being assessed, how adequate any current controls may be, how likely it would be that a fire may start and the possible consequences should a fire break out. It has been noted by Examiners that many candidates when faced with a question related to fire risk assessment give an answer that describes the methodology of the five steps to risk assessment. Such an approach for this question would not give an answer sufficiently focused on a fire risk assessment, nor address all issues an assessor would be looking for in practice while assessing fire risk.

In part (b) an outline of the principles of prevention that are specified in the Regulatory Reform (Fire Safety) Order 2005 (and equivalent legislation in Scotland and Northern Ireland) was required. These principles include avoiding risk, evaluating risk that cannot be avoided, combating risk at source, adapting to technical progress, etc. Many candidates mistakenly gave answers detailing the hierarchy of control and hence do not gain high marks.

The circumstances that require the recording of the significant findings of a fire risk assessment in part (c) include when there are 5 or more employees, when an alteration notice that may require it is in force, and as a matter of good practice.

Question 2	A fire safety audit of an industrial site that handles solid and liquid flammable materials has identified failings in the management of waste. The failings will significantly affect the level of fire risk.
-------------------	--

Outline issues that should be considered in order to manage these waste materials effectively and minimise fire risk. (8)

In this question Examiners are looking for an outline of issues related specifically to the effective management of waste materials that can reduce the level of fire risk associated with them. This includes the provision of secure disposal areas, collecting waste on a regular basis, the physical and chemical nature of the waste materials, how they would behave if alight and the quantities present. As well as such technical issues there are procedural issues to consider such as training staff on safe management of wastes, emergency and spillage containment procedures and ensuring a specialist waste disposal organisation is used.

Question 3 *Contaminated fire-fighting water run-off from the site of a fire can pollute the environment.*

Outline measures that can be used to contain fire-fighting water. (8)

In this question Examiners are looking for the measures that can be used to contain fire-fighting water to protect against environmental pollution.

Such measures include the use of sand bags to bund areas or make use of existing bunded areas, covering drains to prevent water flowing into storm drains or sewers, using interceptors, and taking advantage of the lie of the land to control the flow of the water. Temporary containment measures can also be used to store the water while awaiting its safe removal from site such as use of portable tanks, using trenches, secondary lagoons or a sacrificial area, such as a car park.

Question 4 (a) ***Identify TWO classes of fire where a dry powder extinguisher should be used AND outline the effectiveness of this extinguisher against such a fire.***

(4)

(b) ***Outline:***

- (i) *benefits;* (2)
(ii) *limitations* (2)

of using a dry powder extinguisher.

In this question Examiners are looking for an understanding of the types of fire that a dry powder extinguisher can be used on and the benefits and limitations of that type of extinguisher.

The classes of fire that the extinguisher can be used on include class B, class A and class D. The Examiners also expected candidates to know how effective the extinguisher is on each of these fire classes. The benefits of a dry powder extinguisher include that it can knock down flames quickly, is effective on fire involving spilled and running liquids, and the powder does not conduct electricity. Limitations include the fact that the powder does not cool a fire down, the powder cloud can obscure the operator's vision, and the potential for high cleanup costs.

Question 5 ***Identify information that may be contained in a fire log book.*** (8)

Examiners are looking for a number of items of information that would be expected to be found in a fire log book. Such items include identity of responsible persons and fire wardens, fire instructions, fire drill register, records of fire alarm tests, maintenance records or test records for fire alarms, fire extinguishers, emergency lighting and smoke vents. Other relevant items include records of visits from the fire and rescue service, fire risk assessments carried out in the building and telephone numbers that should be used during an emergency.

Question 6	Describe conditions in which backdraught may occur.	(8)
-------------------	--	------------

This question assesses the candidates' understanding of the circumstances under which a backdraught may occur during a fire. The typical situation in which the possibility of a backdraught is present is when a fire is located within a closed room or other compartment in a building. If a fire has consumed much of the oxygen present in the compartment and there is little air flow from outside then the fire may die down. Introduction of a new source of air into the area by the opening of a door, or a window breaking for example, may result in the rapid ignition of unburnt flammable gases and rapid development of the fire, with very high temperatures typical of a backdraught event.

Question 7	<i>A serious fire occurred in an electrical control panel leading to total loss of the premises. The subsequent investigation identified that fire-fighting equipment was not available and the fire and rescue service was delayed due to access problems to the site.</i>
-------------------	---

- (a) **Identify portable fire extinguishers that could have been used to extinguish the fire in its early stages.** (2)
- (b) **Explain the requirements for suitable access provision for the fire and rescue service:**
- (i) **to the site;** (3)
- (ii) **to the building.** (3)
-

This question sets a scenario involving a fire that started with an ignition source involving electricity. Part (a) expected candidates to recognise that fire extinguishers such as carbon dioxide and dry powder should be used because of the electrical risk.

Part (b) asked for the provisions that should be given to allow access to the fire and rescue service to a site and to the building itself. Access to the site is maintained by the provision of roadways with adequate space and turning circles for fire appliances and that are kept clear of obstruction. In order to ensure fire fighters are able to access the building they can be met by a key holder or someone who can let them in, they can be provided with maps and plans. In addition, fire lifts and smoke venting systems may be provided within the building.

Question 8	Outline issues that should be considered by a fire and rescue service before starting an investigation into a serious fire at a workplace.	(8)
-------------------	---	------------

In this question Examiners are expecting detail of a range of issues to be considered before a fire investigation starts. Any issues detailing how the investigation should be conducted and measures to take once the investigation is complete are not relevant to the questions. Such issues include to preserve the fire scene and secure it by restricting access to unauthorised persons and to make the site safe by ensuring the isolation of electricity and gas supplies. Additionally, by taking account of, for example, the condition of walls, floors and ceilings and the possible presence of chemicals.

A decision would have to be taken both as to who should form part of the investigation team dependent on the particular skills that would be needed and the equipment that would be required such as excavation tools and cameras. Witnesses would need to be identified and preparations considered for how and when they would be interviewed. Also, arrangements should be considered for communicating with the public and the media and for liaising with other interested bodies such as the police, HSE, the Environment Agency and the Local Authority.

Question 9 *People react in different ways in the event of a fire.*

- (a) **Outline** how people may become aware of the threat of a fire. (4)
- (b) **Outline** measures that could be introduced to overcome the behavioural problems of people in the event of a fire. (4)
-

Part (a) asks for an outline of various means by which people can become aware of there being a threat of a fire in a workplace. This includes detecting the signs of a fire through their senses such as seeing or smelling smoke, hearing unusual sounds such as breaking glass, or seeing other people reacting to a fire by heading towards exits. Also, people may become aware of the activation of the fire alarm by hearing fire alarm sounders or seeing visual signals such as flashing beacons.

Part (b) asks for candidates' knowledge of measures that can be introduced to help ensure people respond in a safe way to a fire situation. Such measures include use of trained fire wardens and marshals, fire alarms that are unambiguous, unobstructed escape routes that are well signed and holding regular fire drills.

Question 10 **Outline** control measures that could be used in order to reduce the risk from dangerous substances in a workplace.

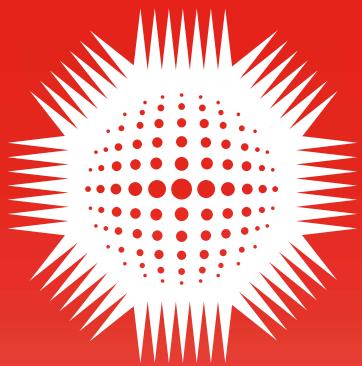
(8)

In this question Examiners are looking for measures that can be used to reduce risk presented by dangerous substances. Such measures include eliminating the need for the dangerous substances, reduce their quantities to a minimum, minimising the release of the substances or controlling their release at source, and preventing the formation of an explosive atmosphere. Other relevant measures include the segregation of incompatible substances, prevention of ignition sources, use of plant or equipment that can contain an explosion, or provision of pressure relief or fire suppression systems.

Question 11 **Explain** factors relating to the number, width and travel distance of escape routes within buildings that make them 'suitable and sufficient'.

(8)

Examiners are looking for the candidates' understanding of the factors that make escape routes suitable and sufficient in relation to the number, width and travel distance of the routes. The factors include that there must be sufficient numbers of routes in a building to allow for the numbers of people that may use them and to provide alternative routes of escape if fire blocks part of a route. The escape routes must be wide enough for the numbers likely to use them, to minimise the chances of the congestion hampering peoples' escape and to be able to accommodate wheelchairs where necessary. With regard to travel distance, escape routes must be sufficiently short so that the time taken for all occupants to escape a building is quick enough to provide safe evacuation.



nebosh

The National Examination
Board in Occupational
Safety and Health

Dominus Way
Meridian Business Park
Leicester LE19 1QW

telephone 0116 263 4700
fax 0116 282 4000
email info@nebosh.org.uk
www.nebosh.org.uk