

January 2015

Examiners' Report

NEBOSH International Diploma in Occupational Health and Safety (Unit C)



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NEBOSH INTERNATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY

UNIT IC: INTERNATIONAL WORKPLACE AND WORK EQUIPMENT SAFETY

JANUARY 2015



CONTENTS

| | |
|-----------------------|---|
| Introduction | 2 |
| General comments | 3 |
| Candidate performance | 4 |
| Learning outcomes | 4 |
| Examination technique | 8 |
| Command words | 9 |
| Conclusion | 9 |

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 examinations taken in over 110 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.

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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 other 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, which is an essential requirement at Diploma level.

This report has been prepared to provide feedback on the standard date examination sitting in January 2015.

Feedback is presented in these key areas; examination technique, command words and learning outcomes and is designed to assist candidates and course providers prepare for future assessments in this unit.

Candidates and course providers will also benefit from use of the 'Guide to the NEBOSH International Diploma in Occupational Health and Safety' which is available via the NEBOSH website. In particular, the guide sets out in detail the syllabus content for Unit IC and tutor reference documents for each Element.

Additional guidance on command words is provided in 'Guidance on command words used in learning outcomes and question papers' which is also available via the NEBOSH website.

Candidates and course providers should also make reference to the Unit IC 'Example question paper and Examiners' feedback on expected answers' which provides example questions and details Examiners' expectations and typical areas of underperformance.

Unit IC

International workplace and work equipment safety

Candidate performance

This report covers the examination sitting in January 2015.

Learning outcomes

Question 1

1.6 Explain the hazards, risks and controls for lone working

This learning outcome concerns identifying the hazards of lone working and explaining how the risks can be managed. The question on the January 2015 question paper was set around the work of an estate agent.

Most candidates were able to identify the hazards associated with lone working. Fewer were able to explain how the risks could be managed in the context of the scenario. This emphasises the point that candidates need to answer the question in the context that it was asked, rather than putting down an unrelated set of points that relate to lone working *generally*.

Some candidates performed reasonably well explaining how the risks can be managed with points related to having communication devices and reporting in to the main office. A few went further, to do background checks on the potential buyer. Some candidates digressed and discussed issues related to potential for road accidents on the journey and stress issues.

The term 'estate agent' appeared to be unclear to some candidates who thought it meant their own estates and who then went on to talk about adding CCTV, alarm systems, security guards, etc.

Question 2

2.1 Outline the properties of flammable and explosive materials and the mechanisms by which they ignite

This question concerned boiling liquid expanding vapour explosions (BLEVEs). Part (a) asked candidates to outline the principles with examples, and part (b) asked candidates to outline the effects.

Some candidates, perhaps due to the industries in which they are employed, found this straightforward, while others struggled. This meant there was a wide-range in the number of marks awarded.

Among the biggest confusion was the difference between a BLEVE and an unconfined vapour cloud explosion (UVCE). This was shown in part (a) with candidates incorrectly citing Flixborough and Buncefield as examples of BLEVE's.

Question 3

3.1 Explain the processes involved in the identification of hazards and the assessment of risk from fire

3.5 Explain the purpose of, and essential requirements for, emergency evacuation procedures

This question gave the scenario of electric mobility scooters in care homes. Most candidates appeared to understand the scenario. Part (a) asked for an outline of how the scooters could affect fire safety. Most candidates appreciated that the scooters could be a source of ignition and fire loading. Few went on to look at the issues of blocked fire escapes and impeding access for the emergency services.

Part (b) was poorly answered for two reasons. Firstly, candidates did not apply the command word, which was 'explain'. Secondly, candidates assumed it was a question on portable appliance testing and therefore provided answers to a different question so marks were unable to be awarded.

The question was clear in asking candidates to explain how a care home could manage fire safety risks associated with the storage and charging of mobility scooters.

It is vital that candidates read and re-read the question.

Question 4

6.7 Explain the analysis, assessment and improvement of system failures and system reliability with the use of calculations

This question on reliability asked candidates to calculate the reliability of two components in parallel. Most candidates were limited in their responses and some candidates did not attempt to answer the question.

Course providers must prepare candidates more thoroughly to deal with this part of the syllabus, that is broader than just simple block diagrams of series, parallel and mixed systems. The calculation and assessment of reliability is a requirement of the syllabus and it also includes 'inter alia' the concepts of 'availability' and mean time between failures (MTBF) and mean time to repair (MTTR).

An understanding of 'holistic' and 'reductionist' approaches to the analysis of systems failures, together with examples, is also required.

Question 5

7.1 Describe the main hazards and control measures associated with commonly encountered mobile work equipment

Candidates were generally well prepared for this question.

Part (a) required candidates to identify the hazards associated with mobile elevating work platforms (MEWPs) and this was handled quite competently. Part (b) concerned the control measures required to operate MEWPs safely and this was also handled well by most. Some candidates wasted time by giving control measures in part (a) and then repeating them in part (b).

Question 6

8.4 Outline the main principles for safe working in the vicinity of high voltage systems

There were many reasonable answers to this question although some confused overhead services with underground services. Many candidates wanted to turn off or re-route the cable despite being told in the question that 'power lines will remain active during the work'.

Question 7

9.2 Outline the principle duties and specific responsibilities for the effective management of health and safety on construction sites

This question concerned the contents of a health and safety plan for a construction site. This was another topic that would traditionally have been in Unit A but, along with reliability and other topics, was moved into the Unit C syllabus and has been examinable since July 2012. Both candidates and course providers should by now have understood this change and anticipated that this was an examinable topic on this unit.

Most responses gave examples of arrangements such as consultation/communication-related issues and some more practical risk controls. Many missed the opportunity to gain marks by adding the need to describe the project itself and the parties who would be involved in it.

Many misunderstood the concept of a 'health and safety plan' and wrote about policy, or what a sub-contractor would have to do, rather than considering management controls.

Question 8

- 4.2 Outline the main principles of the safe storage, handling and transport of dangerous substances**
- 4.3 Outline the main principles of the design and use of electrical systems and equipment in adverse or hazardous environments**
- 5.3 Explain safe working procedures for the maintenance, inspection and testing of work equipment according to the risks posed**

Question 8 was very unpopular with candidates.

This was a technical question concerning corrosion in an underground LPG pipeline. It crossed a number of topic areas on the syllabus and was highly structured, in three parts, in order to guide candidates through the scenario.

Like many topics in Unit C, an understanding of relevant case studies is helpful in appreciating the practical applications and to integrate knowledge. These case studies should form part of candidates' wider reading and preparation for this subject.

Question 9

- 5.1 Outline the criterion for the selection of suitable work equipment for particular tasks and processes to eliminate or reduce risks**
- 6.1 Describe the principles of safety integration and the considerations required in a general workplace machinery risk assessment**

This question was unpopular with candidates.

Examiners were looking for candidates to consider the functional safety requirements (the safety goals to be achieved) in the context of a plastic injection-moulding machine.

Those candidates who did answer seemed to be unaware of the concept of safety integration which includes eliminating and reducing risks throughout the lifecycle of the machinery; the principles of elimination and reduction; instructions taking account use and foreseeable misuse; taking account of operator constraints; and machinery supplied with essentials for operation and maintenance.

The syllabus requires candidates to be able to apply their knowledge to a wide range of machines including mechanical and hydraulic presses. Some practical understanding of how a variety of workplace machines operate is a necessary part of preparing for this element. There are many good introductory texts available for those without a technical background.

Question 10

11.2 Outline the key features and safety requirements for 'simple' unfired pressure systems

11.3 Outline the key features and safety requirements for process pressure systems

11.4 Outline, the likely causes of the failure of pressure systems, and the testing and prevention strategies that can be used

A very unpopular but highly structured question, covering most aspects of element 11 but focusing on learning outcome 11.4, the failure of pressure systems.

Fire tube boilers (the most common sort) seemed to be familiar to candidates. Part of the reason for its unpopularity may be that this is another 'technical' subject.

Question 11

10.1 Explain the hazards, risks and control measures for safe workplace transport operations

A very popular question, this question was based around a very general scenario of reducing the risks arising from workplace vehicle movements.

Factors that need to be considered when tackling this element of the syllabus include: safe sites and their design; safe sites and the activities taking place; safe vehicles; and safe drivers.

Control measures were generally well understood, with very many competent answers being given.

Examination technique

The following examination techniques were identified as the main areas of improvement for candidates:

Candidates misread/misinterpreted the question

It seems to be a particular shortcoming, that candidates do not read the question properly. Candidates tend to provide answers to the question that they might like to have answered, or had anticipated, rather than answering the questions as set.

Examiners ask questions based on the syllabus. Points, no matter how valid in their own right, but unrelated to the question being asked, will not attract any marks. Candidates should note that where there is emphasis in a question (eg by the use of italics), it is to guide candidates towards a particular point. Reading the question encompasses taking due note of this emphasis.

Candidates' handwriting was illegible

While this is not an examination in handwriting, Examiners do need to be able to read the answers presented to them. In an increasingly electronic age, professional people do not have the same need to write text in longhand. However, to pass this examination it is an essential and necessary part of the preparation to rehearse writing questions in full and in the time allocated. Course providers need to identify those candidates whose handwriting is illegible and to provide them with appropriate advice. Examiners cannot award marks for answers that they are unable to read.

Candidates unnecessarily wrote the question down

It is neither necessary nor desirable for candidates to spend time repeating the question before they commence their answers.

Candidates repeated the same point

Candidates often repeat the same point within their answers, for which marks can only be awarded once.

Time management

Candidates need to take note of the fact that answers in Section A are worth 10 marks and those in Section B are worth 20 marks.

The Examiners' expectation is that more detailed answers are required in Section B. Some candidates spend a disproportionate amount of time in writing long answers to Section A questions at the expense of time spent on the more in-depth answers demanded in Section B. Proper preparation and 'mock' examinations can help to correct this.

Structured Answers

It is important for candidates to structure their answers as this helps cover all the requirements of the question without losing focus. It is good examination technique to look for the principles or the concepts that underpin the topic and to use those as a basis for delivering a structured answer.

Candidates answered by posing a question

Candidates need to resist the temptation to present their answers as merely a series of questions. 'Outline' requires candidates *'To indicate the principal features or different parts of'* and this is not done through posing questions to the Examiners.

Command words

The following command words are listed in the order identified as being the most challenging for candidates:

Identify

'Identify. To give a reference to an item, which could be its name or title.'

Most candidates took heed of this, while a minority gave over-elaborate answers when one was not required.

Outline

'Outline. To indicate the principal features or different parts of.'

Most candidates were familiar with the requirements of 'outline'. However, a number of candidates expected that by listing or giving bullet points that would be sufficient. At this level of qualification candidates are expected to be able to construct sentences around their answers.

Explain

'Explain is to provide an understanding. To make an idea or relationship clear.'

Many candidates did not understand that there was more to 'explain' than to merely 'identify'. This command word arose in relation to two questions.

Calculate

'Calculate. To ascertain or determine by mathematical processes.'

This was a straightforward command word and was used in the context of calculating reliability.

Describe

'Describe. To give a detailed written account of the distinctive features of a topic. The account should be factual without any attempt to explain.'

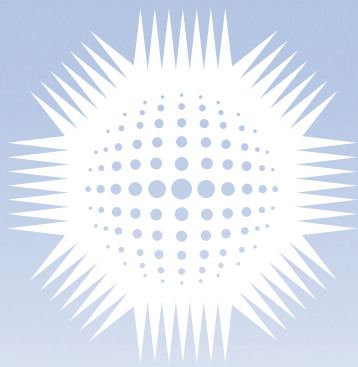
As can be seen from the above, the requirements for 'describe' are quite demanding. This was not appreciated by those who attempted questions with 'describe' as the command word.

For additional guidance, please see NEBOSH's *'Guidance on command words used in learning outcomes and question papers'* document, which is available on our website: www.nebosh.org.uk/students/default.asp?cref=1345&ct=2.

Conclusion

The feedback from Examiners highlighted that candidates taking the Unit IC examinations in January 2015 needed most improvement in the areas of safety integration and machinery risk assessment (learning outcome 6.1), systems failures and system reliability (learning outcome 6.7) and pressure systems failures (learning outcome 11.4).

With regards to examination technique, candidates sitting this examination should practice and get an objective assessment of their handwriting skills; read and re-read the question and answer what has been asked, rather than what they would like to have been asked; be prepared to answer (and to practice answering) new questions; and read and review the syllabus as part of their preparation for this examination.



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