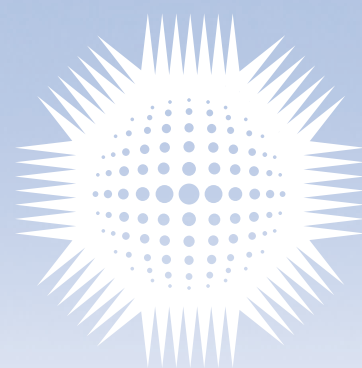


July 2014

Examiners' Report

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



nebosh



Examiners' Report

NEBOSH INTERNATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY


UNIT IC: INTERNATIONAL WORKPLACE AND WORK EQUIPMENT SAFETY

JULY 2014



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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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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 July 2014.

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 July 2014 which produced an overall pass rate of 26%.

Examination technique

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

Reading the question

It seems to be a particular shortcoming, that when faced with new questions that candidates fail to read the question properly. This is particularly apparent for new questions where 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.

Handwriting was illegible

Whilst 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.

Unnecessarily wrote the question down

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

Repeated the same point but in different ways

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

Depth of answers

A small number of candidates do not seem to take note of the fact that answers in Section A are worth 10 marks and those in Section B are worth 20 marks and therefore require a greater depth of response.

The Examiners' expectation is that more detailed answers are required in Section B. A small minority of 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 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.

Command words

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

Outline

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. However, at this level of qualification candidates are expected to be able to construct sentences around their answers.

Explain

Many candidates did not give more depth in their answer to an *explain* question than to merely *identify*.

The current NEBOSH guidance specifically gives an example of how the command word *explain* is used in the context of safety signs.

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

Learning outcomes

Question 1 assessed learning outcome:

1.2 Explain how safety signs are used in the workplace

The topic of safety signs is one that could appear on Certificate level questions. However, what differentiates this learning outcome at Diploma level is that candidates are expected to have a deeper understanding of the topic.

Candidates generally knew how to ensure that the signs remained fit for purpose for example, by ensuring that the signs were clean and not defaced; the signs were still facing the same direction; the signs still had function lighting where appropriate and so on.

On occasions, candidates would be expected to be able to know how signs relevant to a scenario would reduce the risk. So for example, a prohibition sign saying 'no unauthorised access' would have the purpose of assisting in reducing the risk of unauthorised persons coming into contact with vehicle movements. To be awarded marks the link had to be made between the scenario, a relevant sign and the risk being reduced. Very few candidates were able to do this successfully.

Question 2 assessed learning outcome:

8.3 Outline the issues relevant to the installation, use, inspection and maintenance of electrical systems

The majority of candidates knew the topic well. Some candidates found it challenging to demonstrate an understanding of electrical supply and frequently confused this with portable appliances and the consequences of electrical shock.

Those gaining good marks provided structured answers particularly when addressing isolation, prevention of contact, deterring contact, preventing unintentional contact, limiting the effects of contact and other possible measures such as appropriate personal protective equipment (PPE) and other physical measures.

Question 3 assessed learning outcome:

6.6 Explain the key safety characteristics of general workplace machinery control systems

There was a misunderstanding amongst candidates as to the meaning of a 'control system' with many getting confused with the physical controls that is the dials/gauges/levers of machines.

A minority of candidates were able to outline the fact that a control system has inputs/processing/outputs that enable equipment to operate in a particular manner. Input signals can be via manual controls but may come from sensors or the equipment itself. Outputs can be through actuators of varying different sorts. Processing can be through electronic, electrical or mechanical or a combination of means.

Candidates are referred to the syllabus where the key characteristics of a control system are given and include (amongst other things):

- makes allowances for the failures, faults and constraints to be expected in the planned circumstances of use;
- does not create any increased risks;
- does not result in any increased risks in the event of faults or damage to the control system. For example, errors in the control system logic or human error during operation;
- does not result in any increased risks in the event of a loss of energy supply;
- does not impede the operation of any stop controls;
- does not unexpectedly start-up or significantly change its operation.

When addressing safety characteristics of *control systems*, candidates often wrongly went into details about the layout and design or the dials/gauges/levers (the ergonomic aspects of control layout).

Question 4 assessed learning outcome:

4.4 Explain the need for emergency planning and the typical organisational arrangements needed for emergencies

Questions regarding this area of the syllabus may refer to International Labour Organisation's (ILO) Code of Practice 'Prevention of Major Industrial Accidents' (1991).

The syllabus gives direction for candidates with regard to the *need* for emergency response measures for example, minimising the harmful effects of release on people, property and the environment, providing clear, well defined plans and providing arrangements for mutual aid and so on.

Candidates should also be aware of general emergency planning measures to be taken by the competent authorities in association with the works management of an installation.

An important part of the Code of Practice is that it provides guidance to competent authorities. *'This code addresses the activities necessary for competent authorities to establish a major hazard control system...'*

The principle requirement on the competent authorities is to provide a regulatory framework for major hazard control.

Candidates and course providers are directed to Sections 2.6, 3.1.5 and 8 of the Code, which highlight the responsibilities of the installation owners for on-site planning and the competent authority (in conjunction with the owners) for off-site planning.

Candidates often confused the on-site arrangements with off-site planning. As a general point, candidates and course providers are advised to look at the requirements of the syllabus.

Question 5 assessed learning outcome:

7.2 Describe the main hazards and control measures associated with commonly encountered lifting equipment

Candidates were well prepared for this area of the syllabus. There was a minority of candidates who wrongly interpreted control measures for the safe use of lifting equipment with pre-use checks.

Typical factors that a competent person would need to take into account when deciding on the frequency of examination would include age, history of use, environment, current or anticipated use. Most candidates were able to identify these.

Insurance company requirements, manufacturer's design criteria, quality conformance at manufacture, design standards were less frequently identified.

It appeared that candidates had practical experience of managing the safety of lifting equipment and this was reflected in their answers.

Question 6 assessed learning outcome:

1.3 Explain the assessment of risk and safe working practices associated with work in confined spaces

The risks of working in confined spaces, and specifically in sewers, was a popular area of the syllabus and the majority of candidates were well-prepared.

In the context of a 10 metre deep sewer that had collapsed and which needed to be inspected prior to repair most candidates managed to link the context to their answers, so included falls from heights, the risk of further collapse and water ingress.

In addition, the risks from asphyxiation, fire and explosion, fume/toxic gas inhalation were mentioned by the majority.

Question 7 assessed learning outcomes:

4.2 Outline the main principles of the safe storage, handling and transport of dangerous substances

1.5 Explain the hazards, risks, and controls when working at heights

The control measures for reducing the risk of ignition due to static electricity were dealt with competently by most candidates. The need for earthing of the pipeline, the tanker and the tank together with bonding of all joints and the pipeline/tanker were all well understood.

Relaxation time, conductivity of materials, top-filling, anti-static clothing/footwear and reducing the pump rate were mentioned by most candidates.

It appeared that candidates felt comfortable answering questions regarding working at height. In order to assess the risk from this activity, a number of areas need to be considered including the need to work on top of the tanker, the height of the tanker, the presence of overhead obstructions and so on.

More able candidates are able to mention the nature of the product and the possibility of toxicity to the worker, together with the fitness and abilities of the driver and the need for workers' health surveillance.

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.

Question 8 assessed learning outcomes:

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

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

This question assesses that part of the syllabus within IC9.2 that concerns 'relevance of site layout; access and egress; protection of the public'.

The key to successfully answering this question was to focus on the protection of *members of the public*. This phrase was italicised in the question and so directed candidates to what was required.

A small number of candidates merely listed a general set of site safety controls for construction workers, eg wearing of hard hats and safety boots. Whilst in themselves correct points, they did not meet the demands of the question and consequently did not gain any marks.

There were no particular technical challenges faced by the candidates; rather it assessed the candidates' abilities to apply general principles to a specific scenario, focusing on the safety of members of the public.

A particular feature of the scenario was the fact that the works were to be carried out to repair a footpath near to a busy school and in a residential area. Lorries and buses used the road occasionally. Candidates were assessed on aspects of the syllabus within IC10.1 concerning 'control measures for safe workplace transport operations'.

Question 9 assessed learning outcomes:

5.1 Outline the criterion for the selection of suitable work equipment for particular tasks and processes to eliminate or reduce risks

6.2 Describe, with examples, the principal generic mechanical and non-mechanical hazards of general workplace machinery

This area of the syllabus was unpopular with candidates. However, case studies and learning from disasters is an important part of the syllabus.

The Ramsgate Walkway Collapse was due to a number of design and fabrication errors and candidates were expected to discuss these under the syllabus headings of:

- suitability of work equipment for the required task, process and environment;
- suitability of the design, construction and adaptation of work equipment;
- suitability of work equipment for its intended location of use.

The primary reason for the failure was inadequate design and a failure to consider all the degrees of movement to which the walkway would be subjected during normal operations. A stub-axle assembly was subjected to higher than designed stresses and as a result it failed through metal fatigue and resulted in the collapse. Welding errors compounded the situation. Clearly, candidates needed to have studied this incident in order to be able to answer the question.

The syllabus elements assessed under this heading were:-

'Typical causes of failures with examples – excessive stress, abnormal external loading, metal fatigue, ductile failure, brittle fracture, buckling and corrosive failure (Brent Cross, 1964; Markham Colliery, 1973; Littlebrook D, 1978; Ramsgate Walkway Collapse, 1994 ...) ... stress corrosion cracking'.

Question 10 assessed learning outcome:

3.4 Outline the factors to be considered in the provision and maintenance of means of escape

This is a popular area among candidates. However some candidates confused key terms. Many candidates would be disappointed to know that their valid points failed to answer the question and were not awarded any marks. These concerned, for example, the maintenance, audibility and effectiveness of the fire alarm; the number of fire marshals present; the reasons why workers would ignore an alarm and so on.

The majority of candidates provided surplus material concerning the reasons why workers would not comply with fire evacuation alarms. In passing, they covered issues concerning the means of escape and so answered the question by default.

Question 11 assessed learning outcome:

2.3 Outline the main principles and practices of fire and explosion prevention and protection

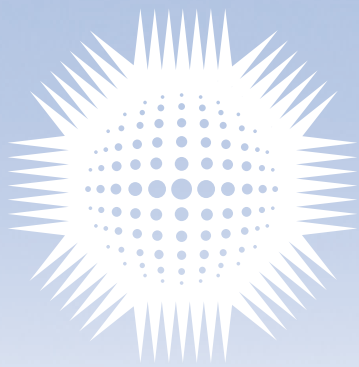
This is another popular area of the syllabus accompanied by the scenarios-based question. Most candidates were able to outline the factors that would need to be considered when risk assessing the activities. Some did not refer to the points such as sources of information on the hazardous properties of the paint, whilst others attempted to outline the control measures. Control measures were generally well understood, with very many competent answers.

Conclusion

The feedback from Examiners highlighted that candidates taking the Unit IC examinations in July 2014 needed most improvement in the areas of case studies (IC6.2), machinery control systems (IC6.6) and emergency planning (IC4.4).

With regards to examination technique, candidates sitting this examination should:

- practise and get an objective assessment of their handwriting skills;
- read the question and answer what has been asked rather than what they would like to have been asked;
- be prepared to answer new questions;
- read and review the syllabus as part of their preparation for this examination.



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