

July 2014

Examiners' Report

NEBOSH National
Diploma in
Occupational Health
and Safety - Unit B



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NEBOSH NATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY


UNIT B: HAZARDOUS AGENTS IN THE WORKPLACE

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.

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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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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



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 National 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 B 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 B 'Example question paper and Examiners' feedback on expected answers' which provides example questions and details Examiners' expectations and typical areas of underperformance.

Unit B

Hazardous agents in the workplace

Candidate performance

This report covers the examination sitting in July 2014 which produced an overall pass rate of 63%.

Examination technique

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

Misread or misinterpreted the question

It is often clear to Examiners that candidates have a reasonable body of knowledge on the topic covered by a question, but they have not been able to apply this knowledge to the examination question being asked. This could be because sufficient time has not been taken to read the question, noting the words being emphasised.

Accredited course providers and candidates should note that various devices are used to draw attention to key words in examination questions. These devices include emboldened and italicised text and the use of words in capitals. These devices are intended to draw the candidate's attention to these words and this emphasis should then be acted upon when making a response.

At this sitting, a number of Examiners identified the misreading/misinterpretation of questions as a problem area for candidates. For example, candidates did not write about the objectives of medical surveillance and instead wrote down what they knew about how to conduct medical surveillance when lead exposure is taking place.

Another aspect of misinterpretation occurs when candidates do not take account of and address their knowledge to scenarios given in the question. Lack of reference to a scenario given in a question occurred in response to question 8 as candidates did not relate their knowledge of TILE to a patient handling situation.

In other cases candidates answered a question with a response learned from their revision of a previous, but different question on that topic.

Lack of technical knowledge required at Diploma level

In Section A, candidates must attempt all questions and it was clear that some struggled with those requiring more detailed and technical knowledge. For example, it is not acceptable that at Diploma level, candidates have no knowledge of the principles of good practice that underpin COSHH. Unfortunately this was often found to be the case in responses to part of question 3.

In Section B, where candidates have a choice of questions, many sought to avoid those questions with a higher technical knowledge content. For example questions on radiation, lighting and vibration. Practitioners operating at Diploma level need to be confident with the technical content of the whole syllabus and this does require a significant amount of private study, particularly in these areas of the syllabus that are perhaps less familiar to them in their own workplace situations.

Handwriting was illegible

It is unusual to have to comment on this aspect of candidate answers, as experienced Examiners rarely have difficulties when reading examination scripts. However, at this sitting a number of Examiners have independently identified and commented on this as an area of concern. Whilst it is understood that candidates feel under pressure in an examination and are unlikely to produce examination scripts in a handwriting style that is representative of their usual written standards; it is still necessary for candidates to produce a script that gives them the best chance of gaining marks. This means that the Examiners must be able to read all the written content.

Some simple things may help to overcome handwriting issues. Using answer planning and thinking time, writing double-line spaced, writing in larger text size than usual, using a suitable type of pen, so perhaps trying out some different types of pens, prior to the examination.

In addition, it is important to practise hand writing answers in the allocated time, as part of the examination preparation and revision. Today, few of us hand-write for extended periods of time on a regular basis, as electronic communication and keyboard skills are so widely used. Accredited course providers should encourage and give opportunities for candidates to practise this hand-writing skill throughout their course of study. They should identify at an early stage if inherent problems exist. These can sometimes be accommodated through reasonable adjustments e.g. by the provision of a scribe or the use of a keyboard.

Command words

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

Outline

This command word requires a candidate to indicate *the principal features or different parts of the subject of the question*. Often candidates answering outline questions did not provide sufficient levels of detail to be considered an outline. Bullet point responses of two or three words do not constitute an outline. Outline questions usually require a range of features or points to be included and often outline responses lacked sufficient breadth when compared to the number of marks available in the question.

Explain

It is not appropriate to respond to this command word with a series of two or three word bullet points. Explain is usually used in conjunction with 'why' or 'how' and so requires the candidates to provide evidence of their understanding. If the explain command word is used in the context of a scenario then the explanation given should make reference to that scenario. When responding to an 'explain' command word it is helpful to present the response as a logical sequence of steps.

Describe

The NEBOSH guide gives the meaning of 'describe' as "*a detailed written account of the distinctive features of a subject. The account should be factual, without any attempt to explain*". Most candidates responded well to this command word when they had the necessary technical knowledge to do so.

Give

This command word was generally well understood with candidates providing responses in sufficient detail. The command word is often used as 'give the meaning of' and when giving the meaning of a specific term such as workplace exposure limit (WEL) or the exposure action limit (ELV) for vibration etc, then technical accuracy and completeness are necessary.

Identify

Candidates responding to identify questions usually provided a sufficient answer. What is required is usually a word or phrase that *gives reference to an item, which could be its name or title*. Sometimes candidates give too much detail for this command word. Candidates should recognise that in some cases providing more words does not necessarily achieve more marks. Examiners will use the command word identify when they require a brief response. If a question asks to identify typical symptoms of visual fatigue, then a response of 'eye irritation' is sufficient to gain 1 mark.

The attention of both candidates and accredited course providers is drawn to NEBOSH's recently published '*Guidance on command words*' document, which is available on our website and should assist: www.nebosh.org.uk/students/default.asp?cref=1345&ct=2.

Learning outcomes

Question 1 assessed learning outcome:

4.3 Outline the principles of biological monitoring

Candidates showed limited knowledge of why carrying out monitoring of workers exposed to lead would be relevant or necessary and so could not outline the objectives of such medical surveillance. It was not necessary to quote any numerical values relating to blood-lead concentrations that represent the action and suspension levels, when answering this particular question. However, knowledge of these values is considered part of the syllabus.

Some candidates remain confused between hazardous substances that are included in the scope of the COSHH Regulations and have WELs assigned; and other substances such as lead and asbestos that have their own specific legislation and occupational exposure limits. Accredited course providers are reminded that both Elements 4 and 2 of the syllabus include specific content in relation to lead (and asbestos) and it was evident that candidates were not well prepared on the topic of lead. Tutors should ensure that candidates are familiar with key points from the ACoP for Control of Lead at work regulations (HSE document L132), which is listed as a tutor reference in the syllabus.

Question 2 assessed learning outcome:

3.2 Explain the various types of personal protective equipment (PPE) available for use with hazardous substances and other chemicals, their effectiveness, and the relevant specifications and standards to be met

In this area of the syllabus candidates should have knowledge of eye protection including 'relevant specifications and performance standards'. This is primarily BS EN 166. When describing '**specific features**' of the eye protection relevant to a scenario, a level of detail is required and a few candidates were not sufficiently familiar with this detail or were unable to apply their knowledge to the hazards that would present in the scenario given. However, overall this question was answered well.

Use of PPE involves a number of stages, the selection of effective PPE, day-to-day use and ongoing maintenance. Sometimes candidates do not read questions carefully enough and so focus on a stage of PPE use that is not required by the question. For example, when asked about 'PPE when in use' practical issues such as storage are relevant and matters to do with selection of PPE, such as consulting workers on choice, are not relevant.

Question 3 assessed learning outcomes:

2.2 Explain the control measures for hazardous substances

1.4 Explain the health effects of chemicals used in the workplace

An important concept that candidates studying the application of the COSHH Regulations need to understand is the concept of 'adequate control'. Whilst generally candidates understand that a WEL should not be exceeded in order to achieve 'adequate control', many candidates seemed unaware of other criteria, in particular adherence with the principles of good practice. The additional requirements for 'adequate control' necessary for carcinogens (mutagens and asthmagens), such as exposure being reduced to as low as is reasonably practicable (ALARP) was also overlooked by some candidates.

A significant number of candidates continue to mix up a practical hierarchy of control measures (starting with elimination, substitution and ending with PPE), with the 'principles of good practice'.

The principles of good practice are an underpinning requirement of COSHH and Diploma level candidates should be familiar with all eight principles. Accredited course providers should place greater emphasis on the study of Schedule 2A of COSHH, which are referenced in 2.2 of the syllabus.

In addition accredited course providers are reminded that in 1.4 of the syllabus there is a list of different 'categories of danger for health effects' and candidates are expected to be able to give an explanation of each of these.

Question 4 assessed learning outcomes:

5.1 Explain the types and properties of biological agents found at work

5.2 Explain the assessment and control of risk from exposure to biological agents at work

In 5.2 of the syllabus there is a list of selected diseases caused by biological agents, for which candidates are expected to have knowledge and understanding of their occupational contexts, occurrence, symptoms, treatment and control. One of these selected diseases is MRSA.

Many candidates were able to outline the source of MRSA as being human but few were able to give any further detail than this. A number of candidates incorrectly referred to MRSA as a virus instead of a bacterium. Whilst this was not critical to gaining marks in response to this particular question this basic knowledge of the categorisation of the selected diseases and their causative agents is part of the syllabus and may be required in other questions relating to Element 5.

When giving details of symptoms caused by the list of selected disease it is necessary to be as specific as possible and avoid use of general terms such as 'flu-like symptoms'.

Whilst there are some general principles of good hygiene practice that are relevant to the control of many biological agents, candidates are expected to have some specific knowledge of control measures that are relevant to each of the biological agents causing the selected diseases listed in the syllabus. These control measures are derived from a more detailed understanding of the nature and means of transmission of the various examples studied. Accredited course providers should ensure that these distinctions are made clear when teaching this part of the syllabus.

Question 5 assessed learning outcome:

8.4 Explain the identification and control of work-related violence/aggression with reference to legal duties.

Candidates generally answer questions on this area of the syllabus well with candidates seeming to prefer this more people-focused topic compared to other more technical areas of the syllabus.

Question 6 assessed learning outcome:

6.4 Explain the principles of controlling noise and noise exposure

Candidates generally responded well on this learning outcome showing a good understanding of this part of the syllabus. Many candidates provided a good range of '*technical*' control measures for noise but they also then strayed into providing organisational controls such as job rotation, etc. This question specifically deterred candidates from providing organisational controls by the emphasising of the word *technical* in italics.

Many of the hazards studied in Unit B have both technical and other types of controls associated with them. Candidates should be clear about broad categories of control measures (eg technical, procedural, organisational, behavioural, etc) so that they can respond more efficiently if asked about one particular category.

Question 7 assessed learning outcome:

7.3 Explain the effects of exposure to ionising radiation, its measurement and control

This was an unpopular choice of question in Section B and candidates who did choose to answer this question did not perform well. This area of the syllabus remains unpopular with many candidates. Accredited course providers should give careful consideration as to how this issue can be overcome. Whilst candidates could avoid addressing this topic on this paper, it is possible for a Section A compulsory question on this topic to be included on a question paper.

Accredited course providers are reminded that the syllabus specifically includes 'Radiological exposure limits (as specified in Ionising Radiation Regulations) classified person'. Few candidates recognised the numerical value quoted linked to the assignment of a person as a 'classified person'.

Candidates seemed more comfortable outlining control measures for exposure to ionising radiation but many of the controls given by candidates were of a more generic nature (eg training, signage, no smoking, drinking eating, etc). The lack of technical knowledge of this topic area meant that more specific control measures were often not included.

Question 8 assessed learning outcome:

9.2 Explain the assessment and control of risks from repetitive activities, manual handling and poor posture

This was a very popular choice of question, with many candidates providing reasonable responses. Most candidates were comfortable with the manual handling risk factors that are associated with the task, load, environment and individual, but often they struggled to draw the link between these risk factors and the scenario given (patient handling in a hospital).

For example, when the load is a patient then the weight may be difficult to assess or is unknown. The patient's movements could be unpredictable perhaps because of a medical condition or the patient may be under the influence of medication. Drawing these links was necessary to be awarded the marks available.

Accredited course providers should ensure that when teaching this part of the syllabus the risk factors are linked to a range of examples of jobs and workplace situations.

Some candidates mixed up risk factors for one aspect eg task, with another eg load. Since this particular question did not deal with the risk factors in separate parts of the question, they were not penalised for this oversight in this instance. However candidates should be clear which risk factors relate to the task, the load, the environment and the individual.

Accredited course providers and candidates should refer to the HSE guidance that accompanies the Manual Handling Operations Regulations (L23), when studying this part of the course.

Question 9 assessed learning outcome:

10.2 Explain the need for suitable and sufficient lighting in the workplace, units of measurement of light and the assessment of lighting levels in the workplace.

This was an unpopular choice of question. The topic of lighting used to be in Unit C of the Diploma syllabus but changes made in 2010 meant it is now in Unit B. Accredited course providers should ensure that this part of the syllabus is being covered to the depth required by the learning outcome 10.2 (explain). Part 10.2 of the syllabus requires candidates to be able to explain 'instrumentation, units and measurement of light, assessment of lighting levels and standards'. It was this aspect of knowledge that was often lacking.

Perhaps drawing a parallel with the methods for carrying out a noise survey would assist some candidates to understand and recall the steps involved in making measurements of lighting levels. Some candidates did recognise that more than one set of measurements may be necessary, if a workplace is used in the hours of darkness, when no natural light is available.

Question 10 assessed learning outcome:

6.7 Explain the measurement and assessment of vibration exposure

Most candidates had a reasonable level of knowledge and understanding of this learning outcome and many chose to answer this question. One difficulty was the degree of accuracy used when giving the meaning of the terms ELV and EAV. Some were loose with the terminology or omitted to mention the importance of the 8 hour time period (also referred to by the term A(8)). This suggested a lack of understanding that vibration exposure is a dose, reliant on both the amount of vibration and the time of exposure.

Most candidates were able to use the HSE vibration calculator and provide suggestions as to how differing combinations of operators and trigger times could be employed to control an individual's exposure to vibration during the working day.

Question 11 assessed learning outcome:

11.3 Outline the management of occupational health (including the practical and legal aspects)

This learning outcome contains a wide range of content but this question focused on the syllabus content on the 'assessment and management of fitness for work with specific reference to; influence of drugs and alcohol (prescription and illegal drugs), including testing on the grounds of health (or disability)'.

When asked to identify specific signs that an employer could look if an employee has a drug or alcohol problem, most candidates were able to give a wide range of signs and most were able to gain nearly the full range of marks available.

Candidates struggled more when trying to identify situations when drug or alcohol testing may be appropriate. Most were able to mention safety critical roles, but other situations were often overlooked. Some candidates did not seem to appreciate some of the practical difficulties associated with carrying out such testing. This could, for example, require a change in the terms and conditions of an employee's contract.

Many candidates chose to answer this question, which required an appreciation of how hazardous substances can be brought into the workplace 'inside a person'.

Conclusion

The feedback from Examiners highlighted that candidates taking the Unit B examination in July 2014 needed most improvement in the areas of ionising radiation (learning outcome 7.3); medical surveillance for lead (learning outcome 4.3); measuring levels of lighting (learning outcome 10.2) and principles of good practice in COSHH (learning outcome 2.2).

It was identified that candidates were well prepared for learning outcomes 3.2, 8.4 and 11.3; the use of PPE, control measures to minimise risk of workplace violence, the use of drugs and alcohol in relation to fitness for work, respectively.

With regards to examination technique, candidates sitting this examination should take care to read the question carefully, respond in relation to scenarios, when they are given, and undertake sufficient study of the more technical aspects of the syllabus. Consideration of handwriting standards and more practice of hand-written examination answers is also recommended.

It is pleasing to observe that the majority of candidates who took the Unit B examination obtained a pass standard and therefore the combined efforts of the accredited course providers and candidates continue to be rewarded in this unit and should be congratulated.



nebosh

The National Examination
Board in Occupational
Safety and Health

Dominus Way
Meridian Business Park
Leicester LE19 1QW

telephone +44 (0)116 2634700

fax +44 (0)116 2824000

email info@nebosh.org.uk

www.nebosh.org.uk