
Examiners' Report

NEBOSH INTERNATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY

UNIT IB: INTERNATIONAL CONTROL OF HAZARDOUS AGENTS IN THE WORKPLACE

JULY 2018



CONTENTS

Introduction	2
General comments	3
Comments on individual questions	4
Examination technique	14
Command words	17

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 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) Accreditation regulatory requirements.

This report provides guidance for candidates and course providers for use 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 July 2018.

Feedback is presented in these key areas: responses to questions, examination technique and command words 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 IB 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 IB 'Example question paper and Examiners' feedback on expected answers' which provides example questions and details Examiners' expectations and typical areas of underperformance.

Unit IB

International control of hazardous agents in the workplace

- Question 1** Window cleaners frequently use extending ladders. They unload the ladders from the roof of their van, carry them to position and extend them to reach higher windows. When they have cleaned the windows, they load the ladders back on to the roof of the van before moving to the next location.
- (a) **Outline** manual handling risk factors when using these ladders. (7)
*You are **not** required to include any risks relating to working at height in your answer.*
- (b) The employer wants workers to store the ladders inside the van and not on the roof.
Comment on how this change could affect the manual handling risks. (2)
- (c) **Outline ONE** change in working practice that could eliminate the manual handling risks from using extending ladders for the window cleaners. (1)

This question assessed candidates' knowledge and understanding of learning outcome 9.2: Explain the assessment and control of risks from repetitive activities, manual handling and poor posture.

In part (a) many candidates were drawn into framing their answers around the TILE (task, individual, load, environment) factors, without truly applying the full circumstances of the scenario. Consequently, they did not explore the full extent of the hazards and judged the scenario very superficially; answers focused on work at height rather than manual handling and gained few marks. Candidates who outlined factors such as reaching above head height or carrying long distances provided more relevant answers. Reference was made to the weight of the ladder but the point was not linked to the material the ladder was made of or its length, therefore marks were not awarded as a full response was not given for an 'outline' question.

For part (b) many answers focused on the aspect of ladders on the roof, rather than issues concerned with restricted access and storage within the vehicle. Additionally, most candidates were able to comment on how the change reduced the existing risk, but not on how it might introduce new risks. Candidates are reminded that the 'comment' command word is often used when writing questions to promote comments regarding **both** negative and positive changes posed by the question.

Most candidates correctly outlined at least one alternative method in part (c), normally the use of extended brush and hose systems or a MEWP.

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- Question 2**
- (a) **Outline TWO** considerations to help ensure that lighting is adequate and appropriate in the workplace. (2)
- (b) **Identify THREE** symptoms associated with visual fatigue. (3)
- Workers in a large open-plan office with windows and artificial ceiling lights carry out work using display screen equipment for a significant part of their working day. A number of workers are complaining that the lighting in the office is not suitable.
- (c) **Consider** what features of the *lighting* in the office might have led to these complaints. (5)
-

This question assessed candidates' knowledge and understanding of learning outcomes 10.2: Explain the need for adequate and appropriate lighting in the workplace, units of measurement of light and the assessment of lighting levels in the workplace; and 9.2: Explain the assessment and control of risks from repetitive activities, manual handling and poor posture.

In part (a) there was a lack of understanding of the term 'consideration' in the wording of the question. Many candidates did not see it as a broad overview of the factors to be considered and gave quite detailed answers. Most answers focused on design, but the range of issues was generally limited to general lighting, local work station illumination and discussion of natural light availability. Very few candidates referred to health issues. Candidates who approached this question as a lighting assessment, lighting measurement or risk assessment question did not do well.

Answers were limited in part (b) to symptoms such as headache and fatigue, demonstrating little understanding of associated symptoms. In addition, a number of candidates based their answers on what factors caused the health condition, eg poor posture, so did not gain high marks.

For part (c) quite a number of candidates considered requirements for a good system of lighting, rather than the faults and defects that might prompt staff to lodge complaints. Candidates who based their answers on the principles of a display screen assessment were awarded better marks. There were examples given of flickering effects, glare and reflections but few answers referred to light spectrum, colour temperature or blue/red light balancing. References were made regarding light colour being wrong but with no real explanation of what or why, and generally answers lacked the depth required for an 'outline' command word.

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- Question 3**
- A training organisation wants to introduce hand-held laser pointers for use by their trainers when presenting courses to students.
- Recent media reports suggest that some hand-held laser pointers can contain Class 3B or Class 4 lasers.
- (a) **Identify** potential eye damage that could result from exposure to lasers with these classifications. (3)
- (b) **Outline** control measures that could help reduce the potential for eye damage to the trainers and students. (7)
-

This question assessed candidates' knowledge and understanding of learning outcome 7.4: Outline the different sources of lasers found in the workplace, the classification of lasers and the control measures.

This question appeared to be the most challenging for candidates in Section A, with the lowest average mark of this Section.

In part (a) many candidates' answers demonstrated little understanding of potential eye damage from exposure to lasers. Some candidates suggested serious effects and red eyes could be caused; however, these answers were not specific enough to be awarded marks. Some wrote long answers demonstrating that they knew a lot about the topic; however, candidates are reminded to take note of the command word. In this case the 'identify' command word required a brief answer and those candidates who wrote answers more akin to a 'describe' command word did not gain any additional marks. Better answers identified damage to retina and temporary loss of vision.

In part (b) some candidates referred to elimination of the laser source by using other methods such as interactive boards or sticks. However, the question states the training organisation wants to introduce laser pointers, guiding the candidate away from looking for other options and instead focusing on the controls when using them. There were numerous references to training but a number of candidates just referred to training in the use of pointers being provided without outlining what the training might include, therefore no marks were awarded. Better answers discussed the need to use lower power lasers or lower class lasers, not pointing lasers directly at students, avoidance of reflective surfaces, and the importance of securing lasers from student use.

Question 4	(a)	Give the meaning of ' <i>work-related stress</i> '.	(1)
	(b)	Identify potential signs that a worker could be stressed.	(3)
	(c)	Outline control measures that could help manage work-related stress in an organisation.	(6)

This question assessed candidates' knowledge and understanding of learning outcomes 8.2: Explain the identification and control of workplace mental ill-health with reference to relevant standards; and 8.1: Explain the effects and causes of common types of mental ill-health within the workplace.

This was the highest scoring question in Section A. However, it appeared that some candidates found this question challenging, despite the publication of clear management guidance on work-related stress. Candidates are reminded to read and re-read the questions carefully and take notice of the command words and marks available for each part of the question to help them structure their answers.

Generally part (a) of the question was well answered, although some candidates were not able to correctly define '*work-related stress*'. There was consideration of work pressures, but no link to the adverse reaction employees have to it.

For part (b) the majority of candidates correctly identified potential signs. Poor timekeeping, mood swings and decreased performance were common responses. However, candidates appeared not to read the 'identify' command word, giving lengthy answers that meant they had less time to spend on the rest of the question paper. The major challenge regarding this question was identifying the potential signs of stress, rather than the symptoms, ie signs should be visible to another worker, management or occupational health staff; therefore, examples of symptoms such as hypertension, heart conditions and insomnia that were given, were not awarded marks.

In part (c) most candidates outlined availability of counselling services, positive working cultures and effective communication regarding change. Few candidates referred to policy documents or specific stress risk assessments and some referred to risk assessments generally.

There was little reference to procedures for reporting stress or links to unacceptable behaviour policies, although some candidates did refer to discipline procedures – but no real explanation of how they fit in – so not worthy of marks.

Better answers provided an example from each of the six Management Standards and as six marks were available this proved to be a successful technique in gaining maximum marks.

Question 5 A worker in a furniture manufacturing workshop spends most of their time machine-sanding hardwood with a hand-held power sander.

Outline control measures to help protect the worker and their colleagues from the risks of exposure to hardwood dust. (10)

This question assessed candidates' knowledge and understanding of learning outcomes 3.1: Explain the principles of prevention and control of exposure to hazardous substances (including carcinogens and mutagens); and 2.2: Explain the identification, classification and health effects of hazardous substances used in the workplace.

The average mark for this question was one of the lowest for Section A, possibly due to answers for this question being typically of a general rather than specific nature.

Candidates had difficulty with the breadth and depth required to gain good marks for this question. Most candidates provided five or six control measures and repeated those frequently. Some candidates mentioned training, cleaning and engineering controls. However, the command word for this question is 'outline' and many candidates did not outline what training the workers would require, what about the cleaning would protect the workers or the engineering controls that could be used.

Some candidates also described in detail LEV (local exhaust ventilation) systems and although the use of an LEV system is an appropriate control, this is not what the question was asking. At diploma level an outline of general control measures does not demonstrate that a candidate understands what appropriate control measures will protect the workers in the scenario given to them in the question. Better answers outlined substitution of the hardwood for softwood, partial enclosure of the process, wet suppression techniques during the work and cleaning afterwards.

Question 6 Hazardous substances entering the body through the skin can cause *systemic* effects.

(a) **Describe** the structure of the skin. (6)

*Marks will **not** be awarded for diagrams. A description in words is required.*

(b) **Explain** how a hazardous substance could enter the body through the skin and cause a *systemic* effect. (4)

This question assessed candidates' knowledge and understanding of learning outcome 2.1: Explain the main routes of entry and the human body's defensive responses to hazardous substances.

Candidates found this question challenging, with only a few able to correctly describe the three layers and structure of the skin for part (a). The majority of candidates were able to state that the skin has three layers and many were able to name them accurately. This would indicate that candidates' knowledge regarding the skin's structure was not sufficient to 'describe' the answer to the question.

The question specifically stated that no marks would be awarded for a diagram and a description in words was required, however, a large number of candidates drew and annotated a diagram, therefore limiting the marks available via annotation rather than a description. Candidates are again reminded to take note of any special instructions given in the question.

In part (b) marks were generally given for demonstration of knowledge regarding how a hazardous substances could enter the body through broken skin or through intact skin. However, very few candidates demonstrated they could explain a systemic effect and how the bloodstream carries the substance around the body to target organs.

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- Question 7** A large indoor poultry farm is concerned about workers being exposed to the zoonose that causes the disease psittacosis (also known as ornithosis).
- (a) (i) **Give** the meaning of the term 'zoonose'. (1)
- (ii) **Identify BOTH** the type and name of the biological agent that causes psittacosis. (2)
- (b) **Explain** how the workers are likely to be exposed to the biological agent that causes psittacosis. (4)
- (c) **Identify** possible ill-health effects that could result from exposure to the biological agent that causes psittacosis. (3)
- (d) **Describe** control measures that could be put in place to help reduce the risk of workers contracting psittacosis. (10)
-

This question assessed candidates' knowledge and understanding of learning outcomes 5.1: Explain the types and properties of biological agents found at work; and 5.2: Explain the assessment and control of risk from deliberate and non-deliberate exposure to biological agents at work.

This was the least attempted question and had the lowest average mark in Section B. For part (a) most candidates were able to give the meaning of the term 'zoonose' and that it is a bacterium. However, very few candidates were able to correctly identify the name of the biological agent.

In part (b) candidates could explain that the material can be inhaled and some candidates explained the type of infected materials that can include dust and feather. Candidates also referred to faeces, but there was little demonstration of the understanding that the faeces had to be dry to be inhaled. Very few candidates expanded their answers to explain other potential routes for the biological agent entering the body, such as ingestion and human to human transmission.

When asked in part (c) to identify possible ill-health effects, answers were very limited, demonstrating little understanding of associated symptoms. Most candidates referred to flu-like symptoms, fevers, cough and headaches and a few identified pneumonia, but there were no references to endocarditis or liver disease.

The answers to part (d) demonstrated candidates' lack of understanding of specific control measures for specific scenarios. Most candidates answered using general control principles that could have been applied to any biological agent. Provision of washing facilities, and provision of PPE were mentioned without a description of what would need to be washed or what PPE would need to be provided and in these cases marks were not awarded.

Health surveillance of the workers was often referred to. Candidates should be mindful that health surveillance is only appropriate in a very limited number of scenarios and better answers described how the health of the birds could be reviewed regularly and infected birds isolated from the flock. Additionally, training the workers to inform their GP of their work with poultry to aid early diagnosis would be appropriate answers to this scenario.

Question 8

- (a) **Explain** when it might be necessary to use respiratory protective equipment (RPE) as a control measure to help reduce exposure to a hazardous substance. (6)

Workers carrying out a task involving the corrosive vapour of ammonia have been provided with RPE to protect them from exposure to ammonia by inhalation. The employer used the following information to determine the selection of the RPE:

Concentration of ammonia vapour in the workplace	280 ppm
Exposure limit for ammonia is	35 ppm (15-min STEL)
Assigned protection factor for selected RPE	20

- (b) **Explain** how the employer can use this information to determine if the choice of RPE is appropriate. (4)
- (c) **Outline** what an employer should consider when selecting RPE for this particular task. (10)
-

This question assessed candidates' knowledge and understanding of learning outcome 3.4: Explain the effectiveness of various types of personal protective equipment (PPE) and the factors to consider in selection of PPE.

Overall, candidates had difficulty with this question. The responses to part (a) were very limited, with candidates having difficulty explaining why RPE might be used as a control measure. Most candidates suggested that it was used as a last resort when exposure levels had been breached or when the source could not be controlled. This demonstrates not only a lack of understanding, but a failure to recognise that RPE only protects the person. Better answers explained that for short duration tasks, to carry out emergency work or where all other control measures had failed, RPE could be used as a temporary control measure.

Some candidates who answered this question did not attempt part (b). However, a significant number of candidates were able to calculate the assigned protection factor (APF) of the RPE used and conclude that the selected apparatus with an APF of 20 was appropriate for use. Most candidates were able to provide an explanation of how the APF is calculated but only a few completed the calculation of maximum concentration in the face piece.

Part (c) was reasonably well answered by the majority of candidates, although answers generally did not include sufficient breadth of considerations to gain maximum marks. Candidates should refer to the number of marks available in relation to the command word for the question. This part had 10 marks available and was an 'outline' command word, therefore describing in detail five or six considerations, although demonstrating knowledge in those areas, meant candidates did not gain maximum marks.

Alternatively, some candidates who identified lots of potential considerations were not awarded good marks due to the lack of outline given. Answers included stating training is required, without considering the level or complexity and maintenance of the RPE, without outlining what aspects of maintenance is important in this case and appropriate for the work. Additionally, there were few references to the need for the RPE to incorporate both eye and face protection, because of the corrosive nature of ammonia.

Question 9

Forestry workers are required to wear personal protective equipment (PPE) to protect them from hazards associated with the machinery they use. This PPE includes eye and head protection, gloves and protective clothing.

The workers are outdoors and being exposed to high levels of ultra-violet (UV), non-ionising radiation from the sun. This situation can lead to heat-related illness and health effects from exposure to the sun.

- (a) **Explain** the importance of maintaining heat balance in the body. (4)
 - (b) **Identify** possible effects of heat-related illness. (4)
 - (c) **Outline** control measures to help reduce the risks from exposure to heat and non-ionising radiation hazards for the forestry workers. (12)
-

This question assessed candidates' knowledge and understanding of learning outcomes 10.1: Explain the need for, and factors involved in, the provision and maintenance of temperature in both moderate and extreme thermal environments; and 7.2: Explain the effects of exposure to non-ionising radiation, its measurement and control.

This question was the most popular question and gained the second highest average mark in Section B. The question was written to provide a realistic scenario in which a safety professional would be asked to provide advice. It was a popular question, although part (a) was not answered very well. However, most candidates appeared to have either direct experience of the scenario or could just easily relate to the scenario in the question.

Answers to part (a) recognised that the body must maintain a stable temperature and most candidates went on to explain how body temperature is maintained. However, that is not what the question asked and many candidates were unable to provide an adequate explanation of the importance of maintaining heat balance. Some candidates quoted the equation $M=K+C+R+E$, which is not required to show the balance of heat from metabolism against normal losses. Many did not recognise the physiological importance of the homeostasis and the maintenance of vital metabolic processes. Candidates who did understand the question were able to explain that maintenance of temperature is essential to survive and accidents can occur if workers get too hot or too cold.

Part (b) asked candidates to identify possible effects of heat-related illnesses and answers to this were generally good. However, some candidates identified the causes, which was not what the question was asking. Candidates commonly mentioned heat stroke and heat exhaustion but did not seem to understand the difference between them.

Some candidates provided very good answers to part (c) and correctly outlined control measures for both the heat and non-ionising radiation hazards associated with the work.

Some candidates did not demonstrate the breadth of knowledge required to gain good marks, instead concentrating on the same few control measures either describing them in detail or repeating them several times in their answers. Several candidates did not provide sufficient detail required for an 'outline' command word. As is often the case with radiation questions, candidates did not demonstrate knowledge and understanding of the differences between non-ionising and ionising radiation. This was evident on some answers, with candidates referring to dosimeters being worn and measurements being carried out with Geiger counters, which are applicable when faced with an ionising radiation hazard.

Those candidates who applied the time, distance shielding principles did gain marks when the answers related to forestry workers. Very few candidates recognised the need for acclimatisation or arrangements for remote or lone working. However, many candidates were able to recognise the need for shade and rest areas with air conditioning/cooling and provision of drinks.

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- Question 10** A worker is using a hand-held jackhammer to break up a large area of concrete. Jackhammers produce high levels of noise and vibration.
- (a) **Outline** the possible ill-health effects to the worker from the prolonged use of jackhammers to break concrete. (5)
 - (b) **Outline** actions that the worker can take to help reduce the risks from their exposure to the noise and vibration of this work activity. (7)
 - (c) **Review** the similarities and differences between hand-arm vibration exposure assessment and noise exposure assessment. (8)
-

This question assessed candidates' knowledge and understanding of learning outcomes 6.2: Explain the effects of noise on the individual and the use of audiometry; 6.3: Explain the measurement and assessment of noise exposure; 6.4: Explain the principles and methods of controlling noise and noise exposure; 6.6: Explain the effects of vibration on the individual; 6.7: Explain the measurement and assessment of vibration exposure; and 6.8: Explain the principles and methods of controlling vibration and vibration exposure

This question was written to provide a more realistic scenario for candidates, where noise and vibration are hazards commonly needing to be addressed for the same work activity. The candidates who chose to answer this question did not do particularly well.

The answers provided in part (a) generally gained marks. However, candidates are reminded to look at the number of marks available, as there were several candidates who outlined two or three ill-health effects, therefore not enabling themselves to gain maximum marks. Most candidates could recognise noise-induced hearing loss and permanent or temporary threshold shift. Raynaud's Disease, circulatory problems and nerve disorders were less well outlined.

Questions should be read and re-read carefully and understood by candidates prior to attempting to provide an answer. Many candidates did not recognise that this part focused on the actions the *worker* could take to reduce their risks and not what actions the employer could take. There were numerous references to job rotation but not outlining the purpose to duration of exposure, so no marks could be awarded.

Part (c) was not well answered. Candidates' answers were too vague stating the instruments are different, the exposures take into account the same things and they are measured differently. Candidates had difficulty providing answers regarding the similarities, such as using personal dosimeters and consideration of all noise/vibration exposed to during the working day/shift. Good answers regarding the differences would have included that noise measures sound pressure in decibels, whereas vibration measures acceleration in metres per second squared.

Question 11 In a chemical process workers are exposed to two organic liquids. Table 1 below shows the average personal exposure levels to each of the organic liquids for one worker measured over an 8-hour day.

Table 1:

Task undertaken by employee	Duration of task	Exposure to Liquid A (ppm)	Exposure to Liquid B (ppm)
Measuring out liquid	30 minutes	280	140
Adding liquid to the mixing vessel	1 hour	110	80
Supervision of mixing	2 hours	150	50
Transfer of mixture to containers	3 hours	150	50

Assume exposure is zero at all other times.

Table 2:

	Liquid A	Liquid B
8-hour time-weighted average exposure of the one worker	125 ppm	50 ppm

- (a) Using the information in Table 1, **demonstrate** that the 8-hour time-weighted average (TWA) exposures of the worker to **BOTH** Liquid A and Liquid B are as shown in Table 2. **(8)**
- Your answer should include detailed working to show how the exposure is calculated.*

The exposure limits for the two liquids are as follows:

Table 3:

Liquid	Exposure limit	
	Long-term exposure limit (8-hour TWA limit reference period)	Short-term exposure limit (15-minute reference period)
A	200	250
B	200	300

- (b) **Outline** what actions the employer might need to take to control exposure to Liquid A, which is an essential component of the chemical process. **(7)**
- (c) **Comment** on the exposure to Liquid B. **(1)**
- (d) There is a concern that exposure to a mixture of these two liquids might increase the risk to workers. **(4)**
- Consider** why this *might* be a valid concern.

This question assessed candidates' knowledge and understanding of learning outcomes 2.3: Outline the factors to consider when undertaking assessment and evaluation of risks from hazardous substances; and 4.1: Explain how occupational exposure limits are used in the workplace

Although this question was the second least popular in Section B, it achieved the highest average marks. However, candidates' responses appeared to indicate a lack of knowledge regarding this topic and that candidates did not read the question properly. Candidates did not answer the question with regards to the scenario provided and instead provided general answers to the question and therefore did not gain marks.

Part (a) was answered very well with many candidates gaining the maximum marks available. Answers showed detailed working and apart from minor mathematical errors candidates provided very good answers.

Part (b) asked candidates to provide an outline of the actions the employer should take with regards to the STEL during measuring/addition of Liquid A exceeding the exposure limit. However, many candidates did not appear to refer to the scenario or information provided in the question, not realising that Liquid A needed further consideration and provided very general actions that did not gain marks.

Some candidates did not attempt to answer part (c). Of those candidates who did, some did not refer to the STELs and LTELs, quoting one but not both, or just stating generic exposure limits. Some candidates stated that the exposure limits were not exceeded, but did not go on to say either no further action was necessary or that maintenance of existing controls was appropriate.

In the last part of this question some candidates were able to identify that mixing chemicals could increase hazardous effects, but there was little reference to synergistic effects or independent/additive effects, therefore very few marks were awarded. There was some confusion between synergistic and additive effects and some candidates did not provide further explanation than that of synergy. Some candidates inappropriately drifted off into control measures in this part of the question.

Examination technique

The following examination techniques are consistently identified as the main areas in need of improvement for candidates:

Candidates misread/misinterpreted the question

Careful and thorough preparation for the examination is vital for candidates. Accredited course providers should assist candidates in setting out and applying sound revision and examination practice and preparation techniques to ensure that they are well prepared for the examination. This includes ensuring that candidates carefully read the question to determine exactly what is being asked and answer accordingly.

Examiners noted that there was evidence of candidates not understanding the question that was asked and therefore providing an answer that was not relevant to the question.

The range of English language skills demonstrated in the examination by candidates varies enormously. Examiners often find themselves faced with scripts where candidates do not appear to have understood the question and struggle to write a coherent answer in English. Candidates for this examination should satisfy the required IELTS Level 7 language requirements. Course providers are reminded that it is incumbent on them to provide appropriate advice and guidance to candidates to help ensure that they stand a reasonable chance of success in the study of the NEBOSH Diploma.

There were numerous examples of quite long, detailed answers that suggest practical experience but do not focus on the question being asked. This may be a result of candidates either not reading the question properly, or because of possible language issues where candidates do not understand what the question is asking.

The examination is assessing candidates on their understanding of 'managing' health and safety and a number of candidates did not seem to grasp this resulting in long, detailed answers on such issues as 'what to look for in an audit' rather than how to prepare for and manage an audit.

Examiners ask questions based on the syllabus. Points, no matter how valid, 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 and re-reading the question encompasses taking due note of this emphasis.

Candidates' handwriting was illegible

The examination situation is a stressful time for candidates and while the examination is not a test of the English language or handwriting, scripts must be legible for Examiners to mark them fairly. As the examination progresses, candidates can become both mentally and physically tired. 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.

When practicing examination technique, candidates should hand-write their answers and get feedback from their course providers on legibility (as well as how they performed).

Course providers need to identify those candidates whose handwriting is illegible and provide them with appropriate advice. Examiners cannot award marks for answers that they are unable to read.

Candidates unnecessarily wrote the question down

There are 15 minutes to answer a 10-mark question in Section A and 30 minutes available to answer a 20-mark question in Section B of the question paper. This time will be required for reading, re-reading and understanding the question, developing an answer plan on the answer booklet and finally committing the answer to the answer booklet. The efficient use of time is essential in order to answer the 9 questions within the 3 hours available. The majority of Examiners reported that candidates felt it necessary to write the question out in full, before providing the associated answer, and this limits the time available. Course providers should remind candidates that it is not necessary to include a question with their answer.

Good examination technique is followed where the candidate frames the answer in the context of the question, rather than rewriting the whole of the question. As with the other examination technique points above, good examination technique is developed through practice and good preparation.

Candidates repeated the same point but in different ways

In some cases candidates tended to make the same point more than once, eg training. Once a valid point has been made and the mark awarded Examiners will not be able to award the mark again. Unless otherwise stated, most questions require candidates to respond with a wide range of issues to gain high marks. Consequently candidates should take care when using terms that contain numerous points that should be made separately.

Accredited course providers should brief candidates on examination technique by way of understanding what points are mark worthy in an answer and those that are not.

Candidates did not respond effectively to the command word

A key indicator in an examination question will be the command word, which is always given in **bold** typeface. The command word will indicate the depth of answer that is expected by the candidate.

Generally, there has been an improvement in response to command words, but a number of candidates continue to produce answers that are little more than a list even when the command word requires a more detailed level of response, such as 'outline' or 'explain'. This is specifically addressed in the following section dealing with command words, most commonly failure to provide sufficient content to constitute an 'outline' was noted. Failure to respond to the relevant command word in context was also a frequent problem hence information inappropriate to the question was often given.

Course exercises should guide candidates to assessing the relevant points in any given scenario such that they are able to apply the relevant syllabus elements within the command word remit.

Candidates provided rote-learned responses that did not fit the question

Examiners report a high incidence of candidates writing down answers they have memorised from previous Examiners' Reports. These answers often relate to a similar, but different question, to which the memorised answer is not wholly applicable. For example, it may require a different aspect of the topic or relate to a different scenario.

Candidates are expected to apply their knowledge and understanding to the actual question given, not the question they think they see. This is why it is extremely important that candidates understand and are able to apply their knowledge, and not just memorise. Course providers should help candidates apply their knowledge to a range of different scenarios to aid understanding of the topic.

Candidates did not allocate enough time to the question

Some candidates were unable to give answers of sufficient depth to warrant good marks and sometimes spent more time on questions carrying fewer marks than was warranted by the command word.

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.

Accredited course providers should ensure that candidates are given adequate opportunity to develop examination skills to ensure that answers are provided to the depth and breadth required.

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

Please note that the examples used here are for the purpose of explanation only.

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

Outline

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

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

An 'outline' question requires candidates to give the main issue and then provide the key features in the context of the question. Where a question that requires candidates to '**outline** the issues to be addressed in the development of an audit system' the response should provide adequate context to the issues in order to gain the marks. An answer that merely includes issues such as 'scope, training, commitment, etc' will not gain good marks since while the issues are relevant there is no context to the issues in relation to the question asked.

Candidates should provide context to the point being made to demonstrate understanding of the subject.

As required by a Diploma level qualification candidates should be able to demonstrate a detailed understanding of the subject matter and therefore be able to summarise and contextualise technical points in the field of health and safety. Those candidates who did provide good outlines to questions demonstrated understanding of the topic without going into too much detail.

If asked to '**outline** the purpose of local exhaust ventilation' in a given scenario, an answer such as 'contaminant removal, exposure limits' would be insufficient as this represents a listed answer. However, removal of contaminant at source (as far as possible) and ensuring exposure limits are not exceeded would higher gain marks.

If asked to '**outline** how health risks from exposure to lead should be managed...' in a given scenario, an answer such as medical tests, PPE, RPE would be insufficient as this represents a listed answer. However, surveillance tests for lead in blood/urine, the use of PPE such as overalls, the use of RPE such as respirator with appropriate particulate/fume filters would gain marks.

Explain

Explain: To provide an understanding. To make an idea or relationship clear.

Many candidates are still not properly prepared for this command word. A list of points (no matter how relevant) will not satisfy Examiners when the command word is 'explain'. So for example, where candidates were asked to explain the circumstances where heat and smoke detectors would be inappropriate, Examiners were looking for candidates to explain that heat detectors would be inappropriate in environments where temperatures fluctuate suddenly during normal work activities. Just saying 'workshops', for example, is not enough to provide an answer to an 'explain' question.

Commonly, candidates do not provide adequate detail in relation to this command word, eg '**explain** limitations of relying on accident numbers only as a measure of health and safety performance'. An appropriate response would provide the reader with reasons why relying solely on accident numbers would not provide a comprehensive view of the organisational performance in health and safety, eg accident numbers do not indicate incidence of ill-health and accident data may go up following initiatives following underreporting, etc.

Candidates are generally unable to provide clear answers where this command word is used but that may be due to lack of knowledge rather than not understanding what is required, since an explanation requires the candidate to provide reasoning for their answer. For example, when a question specifies 'explain' the candidate is required to provide an understanding or make clear an idea or relationship. For example '**explain** how malaria is transmitted to humans'. If a candidate responded with *mosquito bites humans* this would be insufficient to merit full marks as this does not provide a deep enough understanding or relationship from the specified command word or the context in which the question is asked. However, a candidate would get full marks if they elaborated on this stating that the disease originates with the plasmodium parasite that is then transmitted to humans via a bite from a feeding female mosquito that carries it; the parasite then transferring to the human blood stream, travelling to the liver.

Describe

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

Candidates are required to provide a word picture in response to this command word and therefore the candidate needs to have a good understanding of the subject of the question in the examination in order to gain good marks. Typically, a limited response to this command word will be an inadequate amount of detail in the answer.

For example, when asked to describe the contents of a safety policy candidates should provide the Examiner with relevant information about the contents of the policy, eg 'the policy should contain details of the organisational commitment to health and safety'. This would be supported with specific targets and commitment resource to ensuring compliance as a minimum but developing the health and wellbeing of the employees, etc'. An answer that goes no further than listing the subjects of to be covered in the policy would not attract good marks in the examination.

In the examination, lists and single word answers will rarely satisfy the requirement of the Examiners in terms of answering the question at this level. It is noticeable that the well prepared candidate has less trouble deciphering command words and tends to gain good marks whereas those candidates who use single word answers will tend not to have the knowledge to write anything further in the context that is required.

Give

Give: Only a short answer is required, not an explanation or a description.

'Give' is normally used in conjunction with a further requirement, such as '**give** the meaning of' or '**give** an example in **EACH** case'.

In some circumstances candidates may spend too much time giving unrequired detail in response to this command word. It is often used in conjunction with the meaning of a phrase or statement and candidates can over-elaborate the required answer. Time management is important in the examination and candidates should ensure that they respond with appropriate brevity where the command word and available marks suggest that is all that is required.

When asked to '**give** the meaning of motivation', it would appropriate to say that 'motivation is the driving force that leads an individual to behave in a certain way'. It would not be appropriate to discuss in detail different motivational theories.

On the whole most candidates respond well to this command word, often by offering a definition. There is evidence where candidates go into too much detail that left those candidates writing large amounts of text for very few marks.

Identify

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

As with 'give' above it is not uncommon for candidates to over-elaborate their answers in response to this command word. It is adequate for a candidate to provide the key point to the Examiner without further developing the point with supporting theory or examples unless they are specifically asked for.

When providing a response to 'identify' the mental selection and naming of an answer that relates to the question should be sufficient. In most cases, one or two words would be sufficient to be awarded corresponding marks. Any further detail would not be required and impacts negatively on the time limit for completing the examination. For example, if the question was '**identify** possible effects on the body when someone is exposed to lead' suitable responses would include developmental effects in unborn babies, anaemia, nausea/vomiting in order to be awarded a mark.

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.