
Examiners' Report

NEBOSH NATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY

UNIT B: HAZARDOUS AGENTS IN THE WORKPLACE

JANUARY 2019



CONTENTS

Introduction	2
General comments	3
Comments on individual questions	4
Examination technique	16
Command words	20

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.

© NEBOSH 2019

Any enquiries about this report publication should be addressed to:

NEBOSH
Dominus Way
Meridian Business Park
Leicester
LE19 1QW

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

General comments

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

There are other candidates, however, who appear to be unprepared for the unit assessment and who show both a lack of knowledge of the syllabus content and a lack of understanding of how key concepts should be applied to workplace situations, which is an essential requirement at Diploma level.

This report has been prepared to provide feedback on the standard date examination sitting in January 2019.

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 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.

Unit B

Hazardous agents in the workplace

- Question 1** Employees driving vehicles on a large construction site have reported back pain caused by exposure to whole body vibration (WBV).
- (a) **Outline** control measures that could minimise their exposure to WBV. (7)
- (b) **Outline** *other* possible work-related causes of the back pain being experienced by these employees. (3)

This question assessed candidates' knowledge and understanding of learning outcomes 6.6: Explain the effects of vibration on the individual; 6.8: Explain the principles and methods of controlling vibration and vibration exposure; and 9.1: Outline types, causes and relevant workplace examples of injuries and ill-health conditions associated with repetitive physical activities, manual handling and poor posture.

Candidates' responses in part (a) included some relevant control measures, such as maintaining roadways by filling potholes and using suspension seats in the cabs of vehicles. A more fundamental control measure of selecting vehicle size or power or capacity to suit the terrain, was often missed.

Some responses were too vague for the scenario given in this question. Candidates did not gain a mark for simply indicating job rotation, as this did not outline that this needed to be a break away from driving vehicles. Rotating to a job that also involved exposure to vibration would not minimise exposure. Similarly, simply stating the need to train or inform drivers was not awarded a mark. What was required was an outline that training and information should be given about how to minimise exposure to WBV.

Most candidates were able to outline other possible causes of work-related back pain in part (b). Poor posture and sitting for long periods were the obvious and most common responses. Fewer candidates outlined incorrect seat adjustment or the lack of adjustability for other controls in the cab. Repeated climbing into high cabs or jumping down from high cabs is also a possible cause.

-
- Question 2** The management company of a large, new shopping centre are planning first-aid provision for the centre. They already have in place a sufficient number of trained first-aid personnel.
- Describe** the first-aid equipment and facilities that could be included in these plans. (10)

This question assessed candidates' knowledge and understanding of learning outcome 10.4: Explain the requirements and provision for first aid in the workplace.

This question asked specifically for a description of first-aid equipment and facilities, therefore those candidates who wrote about a first-aid needs assessment were not addressing this question. However, those candidates who did answer the question combined their real life experience of visiting such shopping centres with their knowledge of learning outcome 10.4.

The command word in the question is 'describe' and that requires a detailed written account of the distinctive features of a subject such that another person would be able to visualise what is being described. Sometimes candidates did not answer in accordance with this command word and so missed out on some possible marks. For example, if candidates stated there should be first-aid signage, this is not a description. If candidates described first-aid signage that is a white cross on a green background, they did gain marks.

The main focus for a description of first-aid equipment and facilities should have considered first-aid boxes and first-aid rooms. There is detail that could be included in a description of each of these, in particular the locations, contents and management. Candidates and course providers are referred to the detail provided in the HSE guidance L74, particularly the content in relation to Regulation 3 of the Health and Safety (First-Aid) Regulations 1981. L74 is the only relevant reference listed in the syllabus in relation to learning outcome 10.4, so should be central to the study of this part of the syllabus.

Some candidates were familiar with this guidance, they included in their answers reference to the possible provision of automated defibrillators and the availability of aspirin in case of a heart attack. There were further marks available for indicating that aspirin should be kept separate to the first-aid box, not inside it.

Question 3	Sailing instructors at a freshwater sports centre are at increased risk of contracting leptospirosis.	
(a)	Identify ill-health effects associated with leptospirosis.	(2)
(b)	Outline the mode of transmission of leptospira for these sailing instructors.	(2)
(c)	Outline control measures the sailing instructors could take to minimise the risk of contracting leptospirosis.	(6)

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 question assessed these learning outcomes in relation to one of the biological agents specifically listed in the syllabus.

In part (a) there were a wide range of possible ill-health effects and most candidates were able to achieve the two marks available. A rash or meningitis were rarely identified by candidates as possible ill-health effects, but are listed in the guidance leaflet on the HSE website:

<http://www.hse.gov.uk/agriculture/zoonoses-data-sheets/leptospirosis.pdf>

Candidates often gained marks in part (b) as they outlined a wide range of possible modes of transmission, some of which were correct and some of which were not. An outline should have indicated that there is bacteria (leptospira) in water due to the presence in the water of urine from rats (and some other animals such as cows). The bacteria are transmitted via cuts in the skin and also via the mucous membrane in the nose or eyes or mouth. Inhalation and ingestion are not the accepted modes of transmission.

Part (c) presented little difficulty for candidates who were able to outline a range of control measures that minimise the risk of contracting leptospirosis in this scenario. However, some candidates were vague in the outline of some control measures and therefore missed out on marks. For example, if wounds or cuts are to be covered to minimise the risk of transmission, then these must be waterproof, given the scenario and mode of transmission. Candidates did not always include this important detail in their outline. Similarly the washing down of equipment needs to include the use of a suitable disinfectant, and this part of the outline was sometimes missed.

-
- Question 4** Glass blowers use furnaces to produce molten glass that they then blow into shapes to make glasses and vases. During their work they are exposed to different types of non-ionising optical radiation.
- (a) **Identify** the possible ill-health effects to the glass blowers from exposure to the non-ionising optical radiation. (3)
- (b) **Describe** the specific requirements of the personal protective equipment that would be required to protect the glass blowers from the non-ionising optical radiation. (3)
- (c) *Other than* ill-health effects and control measures, **outline** what should be considered in a radiation risk assessment. (4)
-

This question assessed candidates' knowledge and understanding of learning outcomes 7.1: Outline the nature of the different types of ionising and non-ionising radiation; 7.2: Explain the effects of exposure to non-ionising radiation, its measurement and control; 3.4: Explain the effectiveness of various types of personal protective equipment (PPE) and the factors to consider in selection of PPE; and 10.1: Explain the need for, and factors involved in, the provision and maintenance of temperature in both moderate and extreme thermal environments.

Candidates were expected to recognise that in this scenario glass blowers are being exposed to both infrared (IR) and ultraviolet (UV) radiation, both of which are types of non-ionising radiation. It was not clear in the overall responses to this question if candidates understood these hazards. However, in part (a) most candidates were able to identify three possible ill-health effects such as skin reddening or, skin cancer and cataracts. Whole body heating or thermal discomfort was also a valid ill-health effect.

Part (b) was not well answered with few candidates providing a description of the requirements of any PPE. Often candidates just wrote 'wear gloves and goggles'. This is not acceptable as a Diploma-level answer and this is not a description of how the requirements of PPE protect the glass blowers. To gain marks it was necessary to describe, for example, the need for leather gauntlets or long heat resistant gloves that would protect against the infrared radiation. Similarly, a description of goggles, glasses or a visor with a UV and IR filter is needed to protect the eyes from both these types of radiation. Long-sleeved clothing and a leather apron would also afford protection from UV and IR radiation respectively.

Responses to part (c) were also limited, with candidates not reading the question carefully enough to appreciate that an outline of control measures was not required. The words '*other than*' are italicised to draw attention. The question asks what else should be considered in a radiation risk assessment. As the syllabus indicates in learning outcome 7.2, such a risk assessment should consider the assessment or measurement of the actual levels of exposure to the radiation and then compare these to the exposure limits and exposure values. A risk assessment for exposure to most hazardous agents requires consideration of both the duration of exposure and in the case of radiation proximity or closeness to the source is also important. References to health surveillance although relevant were often vague. To address this question it is necessary to outline that the results of health surveillance should be considered in a radiation risk assessment as they give an indication of any over-exposure that may be occurring.

Question 5 The Health and Safety Executive (HSE) identifies six stress Management Standards, one of which is *Change*. The requirement of this standard is that *'Employees indicate that the organisation engages them frequently when undergoing an organisational change'*.

(a) An organisation is about to undergo a significant change.

Outline steps the organisation could take to help reduce the risk of employees suffering from work-related stress as a result of this change. (6)

(b) **Identify TWO** other HSE stress Management Standards **AND** give the requirement for **EACH**. (4)

This question assessed candidates' knowledge and understanding of learning outcome 8.2: Explain the identification and control of workplace mental ill-health with reference to legal duties and other standards.

The stem to the question reminded candidates of the HSE stress Management Standards and in particular the wording of the standard regarding 'change'. However, a number of candidates had difficulty providing an outline of what an organisation could practically do to reduce the risk of stress by reassuring employees about the process and timescale for change.

Some candidates did gain marks for referring to the need for consultation, and communication throughout the change process. For the six marks available, candidates needed to expand on these themes of consultation and communication.

Marks were available for those steps listed in the HSE guidance found on the HSE website and in the HSE guidance document INDG430. Providing timely information, setting out a clear timetable for the change process, agreeing the methods and frequency of communication and updates were all mark worthy. The provision of support to employees during the organisational change was another area where candidates could have gained marks. This support could be in relation to their understanding of objectives and workload as the changes progress, or support with training, so that they are prepared for the changes to their job.

Part (b) required candidates to have knowledge of the other five HSE stress Management Standards by identifying two of these standards and briefly stating what the requirement of those two standards were. Four marks were available but candidates could not gain these four marks by simply listing four of the other standards. This is indicated clearly in the question as the two requirements of the question are linked by the word **AND**.

Many candidates gained two of the four marks by naming two of the standards: Demands, Control, Support, Relationships and Role. Fewer candidates gave an acceptable summary of the requirement of those two standards. For example, Demands: employees indicate that they are able to cope with the demands of their jobs.

Question 6	(a) Outline what is meant by the term ' <i>biological monitoring</i> '.	(2)
	(b) Outline circumstances in which biological monitoring may be appropriate.	(4)
	(c) Outline difficulties an employer must overcome when introducing a programme of biological monitoring.	(4)

This question assessed candidates' knowledge and understanding of learning outcome 4.3: Outline the principles of biological monitoring.

Some candidates find the topic of biological monitoring challenging. A common confusion is to think this topic is about exposure to biological agents, but that is addressed in element 5 of the syllabus and not relevant here in element 4. Some candidates seem only to associate biological monitoring with drug or alcohol testing in a workplace. While that may be the extent of biological monitoring in some workplace settings, this is not the intended emphasis in learning outcome 4.3. That type of testing is perhaps more relevant in the consideration of occupational health and health assessment in element 1. Course providers should ensure candidates being prepared for examination appreciate the relevance of this part of the syllabus, which clearly states that biological monitoring is a form of health surveillance.

The term 'biological monitoring' required in part (a) is the measurement of a hazardous substance or their metabolites in tissues, blood, exhaled air or secretions.

There are particular circumstances when biological monitoring is relevant and these are outlined in the HSE document EH40 (page 38). Candidates and course providers should review this.

Part (c) required an understanding of the practical difficulties of firstly collecting samples for biological monitoring (eg blood urine, etc), managing these samples, then reporting, storing and utilising the results. Difficulties include consent, having appropriately trained individuals, maintaining confidentiality and the obvious cost implications. There are few biological monitoring guidance values with which to compare the results. These values are also listed in the HSE document EH40.

Question 7 Employees in a busy restaurant frequently use hand-held trays to carry plates of food and drinks from the kitchen to the customers' tables. These hand-held trays can be heavy and unstable.

There are regular incidents where employees drop the trays.

To help reduce these incidents, the employer has decided to introduce non-powered trollies, on wheels, that will be used by the restaurant employees to transport their customers' food and drink orders.

- (a) **Outline** what the employer should consider when *selecting* suitable non-powered trollies for this task. (14)
 - (b) **Comment** on how this change could affect the manual handling risks to the employees. (3)
 - (c) **Comment** on how this change could affect other risks to the employees and to customers' safety and health. (3)
-

This question assessed candidates' knowledge and understanding of learning outcomes 9.1: Outline types, causes and relevant workplace examples of injuries and ill-health conditions associated with repetitive physical activities, manual handling and poor posture; and 9.2: Explain the assessment and control of risks from repetitive activities, manual handling and poor posture.

The majority of marks for this question were available in part (a) and some candidates gave too limited a response for the 14 available marks in this part.

Some candidates did not address the part (a) question about selecting trollies and instead answered a different question about a manual handling risk assessment for the scenario given, using the TILE approach. Therefore, few relevant points were addressed.

Candidates gained marks for outlining the following considerations when selecting the trollies: the size of the trollies in relation to the space to operate; the design of the wheels; the floor conditions in the restaurant; whether brakes should be fitted and what maintenance or inspection is required for the trollies. Few candidates indicated the need to carry out trials and ask for testimonials or feedback from other restaurants.

Some candidates did not confine their response to purely ergonomic or manual handling related matters and were therefore able to score further marks. In this type of work environment hygiene and ease of cleaning of the trollies is also an important consideration, as is cost and the aesthetics of the trollies. It is important that health and safety practitioners recognise these wider considerations form part of decision-making processes in an organisation.

Changes in a work process can often reduce some risks but at the same time introduce or increase other risks. Candidates were required to comment on this in parts (b) and (c). In part (b) this comment was restricted to just manual handling risks. Many candidates indicated that while the trollies may reduce carrying, pushing and pulling of the trollies would now occur. Depending on the height of trollies and in particular the handles on the trollies, some employees may also now need to stoop.

In part (c) candidates were asked to comment on wider risks and many did indicate that the use of the trollies should reduce the instances of food being dropped or spilt. However, foot injuries may occur as trollies are wheeled around. Few candidates indicated that both the storage and use of the trollies could affect fire escape routes, perhaps causing obstruction in the event of an evacuation.

Question 8

An asbestos survey of a large office block has identified significant amounts of asbestos containing materials (ACMs) throughout the building.

- (a) Occasionally, minor maintenance tasks that involve drilling into ACMs are carried out.
- (i) **Outline** criteria that must be met for these minor maintenance tasks to be considered as 'non-licensed' work under The Control of Asbestos Regulations 2012 (CAR 2012). (4)
- (ii) **Describe** the personal protective equipment (PPE) that would be appropriate for these minor maintenance tasks involving ACMs. (4)
- (iii) *Other than* PPE, **outline** control measures that should be used when drilling into ACMs. (5)
- (b) Significant parts of the office block are due to be refurbished and this will require the *removal* of some ACMs.
- Outline TWO** reasons why the information in the existing asbestos survey may not be sufficient to allow this refurbishment work to take place safely. (2)
- (c) The work to remove ACMs is to be carried out by a licensed contractor in accordance with CAR 2012.
- Outline** arrangements that should be in place *before* the licensed contractor can start work on site. (5)
- You are **not** required to outline details of how the removal work should be carried out on site.*
-

This question assessed candidates' knowledge and understanding of learning outcomes 3.2: Outline the specific requirements for working with asbestos; and 3.4: Explain the effectiveness of various types of personal protective equipment (PPE) and the factors to consider in selection of PPE.

This question was divided into a number of parts and the performance on each part of the question was variable. Overall candidates responded better to part (a) than part (c). However, part (a) responses often lacked technical detail and in part (c) many candidates ignored the advice provided in the question that specifically indicated **not** to include details of how removal work should be carried out.

In part (a) (i) most candidates appreciated that the criteria for 'non-licensed' work, related to short duration, non-continuous maintenance tasks of typically less than 1 hour. Few candidates were familiar with the numerical detail of asbestos control limits, but did gain a mark for stating that this legal control limit must not be exceeded in non-licensed work.

Descriptions of the PPE and other equipment required for these maintenance tasks were often limited. This suggests candidates answering parts (a) (ii) and (a) (iii) were not familiar with the task sheets provided on the HSE's asbestos essentials website. In part (a) (ii) detail such as wearing boots with no laces was required. While many candidates indicated face fitted RPE was needed, fewer candidates described these as needing to have an assigned protection factor of 20 and an FFP3 filter.

Many candidates limited their outline in part (a) (iii) to restricting access to the area where the non-licensed work was being carried out and did not include controls such as using a hand drill or drilling through a paste or foam to help minimise fibre release.

In the scenario given in the question the work now changes from being a limited maintenance task in part (a) to a more significant refurbishment activity in parts (b) and (c). There are a number of reasons why the asbestos survey, referred to before carrying out the maintenance work, might not now be sufficient before carrying out the refurbishment work. Most candidates achieved 1 or 2 of the marks available and did this by limiting the reasons to the survey being out-of-date, or the survey being a management survey rather than a demolition and refurbishment survey. Marks were also available for outlining that the survey may not have been carried out by a competent person, or may not have been carried out in accordance with HSE guidance HSG264.

Answers to part (c) were limited because candidates did not focus on the question, which asked about arrangements *before* the work starts on site. Candidates and course providers are reminded that when words in questions are italicised it is intended to draw the candidate's attention to that word, so they respond accordingly. In this question further guidance was given in the final italicised sentence. However, many candidates did not act on this guidance and wrote about the construction of enclosures, air clearance testing, etc which was not required.

The key arrangements that need to be in place before licensed work starts on site are concerned with notification of the work, a plan of work, competence of employees and health and medical records. There were a wide range of marks available in relation to each of these arrangements, but many candidates only had knowledge of the requirement to notify the HSE, and to do this using a form ASB5 at least 14-days before the work starts. Few candidates included the need for a plan of work and the communication of that plan to all those involved. Course providers and candidates should refer to the HSE document L143, which is listed as one of the syllabus references. (L143: Managing and working with asbestos, Control of Asbestos Regulations 2012, Approved Code of Practice and guidance).

Question 9	Human epidemiology and animal studies are methods that can be used to investigate whether a substance is carcinogenic.	
(a)	(i) Explain what is meant by the term ' <i>carcinogen</i> '.	(2)
	(ii) Outline the advantages and disadvantages of human epidemiology.	(5)
	(iii) Outline the advantages and disadvantages of animal studies.	(5)
(b)	Outline the control measures that should be in place in a workplace where a carcinogenic substance is used.	(8)

This question assessed candidates' knowledge and understanding of learning outcomes 2.2: Explain the identification, classification and health effects of hazardous substances used in the workplace; 2.4: Outline the role of epidemiology and toxicological testing; and 3.1: Explain the principles of prevention and control of exposure to hazardous substances (including carcinogens and mutagens).

In part (a) (i) some candidates limited their explanation to stating that a carcinogen was a chemical that can induce cancer and so achieved one of the two marks available. Those candidates who gave a fuller explanation and included information such as causing benign or malignant tumours and causing cells to divide at a faster rate than normal, achieved the second of the two marks available.

Many candidates were able to provide an outline of the advantages and disadvantages of both human epidemiology and animal studies when responding to parts (a) (ii) and (a) (iii). The requirement to provide both advantages and disadvantages within the same part of the question meant that candidates were not penalised if they knew more advantages compared to disadvantages or vice versa. Obvious disadvantages of human epidemiology are that large study populations are needed and often people are lost from the study as it progresses over time. Many candidates appreciated that lifestyle factors could affect the study and that such studies are costly.

When outlining advantages and disadvantages of animal studies nearly all candidates referred to the ethical issues and again the cost, but indicated the obvious advantage of no direct risk to humans.

Responses to part (b) were limited, with many candidates simply stating the Control of Substances Hazardous to Health (COSHH) hierarchy of control, without giving proper consideration to the control measures that are particular to carcinogenic substances. These are listed in the syllabus at learning outcome 3.1 and are total enclosure, prohibition of eating and drinking in contaminated areas, designation and cleaning of contaminated areas, the use of suitable warning signs and closed and labelled containers. Further reading would be Regulation 7 of the COSHH Approved Code of Practice (HSE document L5). Some of the general hierarchy of control used for other hazardous substances can be relevant when controlling carcinogens, such as reducing the number of people that are exposed and the time people are exposed – marks were available for these.

-
- Question 10**
- (a) A machine operator works at a number of different machines during each 8-hour working day.
- (i) **Describe** how static measurements of sound pressure level can be made while the operator is operating the machines. (4)
- (ii) **Explain** how to determine the daily personal noise exposure ($L_{EP,d}$) for the operator from the static measurements of these sound pressure levels. (3)
- (b) The operator's job changes so that two days each week they do not operate any machines and instead undertake maintenance work while some of the machines are switched off. It is decided to reassess their exposure to noise using weekly personal noise exposure ($L_{EP,w}$).
- (i) **Outline** circumstances in which it might be appropriate to use $L_{EP,w}$ to assess noise exposure. (2)
- (ii) Using information in the table and the noise exposure ready-reckoner (weekly exposure), shown in the Appendix, **calculate** the $L_{EP,w}$ for the operator in this new job. (7)

Day	$L_{EP,d}$ dB(A)	Activity
Monday	88	Operating machine 1
Tuesday	78	Maintenance
Wednesday	84	Operating some time on machines 1, 2 & 3
Thursday	83	Operating machine 3
Friday	79	Maintenance
Saturday	Insignificant	Day off
Sunday	Insignificant	Day off

- (iii) Using the information in the table and your calculated value of $L_{EP,w}$ **comment** on the operator's noise exposure in relation to The Control of Noise at Work Regulations 2005. (4)

This question assessed candidates' knowledge and understanding of learning outcomes 6.1: Explain the basic physical concepts relevant to noise; 6.3: Explain the measurement and assessment of noise exposure; and 6.4: Explain the principles and methods of controlling noise and noise exposure.

Part (a) (i) of the question was not always well answered, as candidates did not describe sufficiently well how to make static measurements. Few candidates indicated that the measurements being made were an equivalent continuous A-weighted sound pressure or L_{Aeq} . Candidates were more familiar with the idea of using the HSE 'Noise exposure calculator' or 'Noise exposure ready reckoner' to determine the daily personal noise exposure and so gained more marks in part (a) (ii).

Part (b) (i) required candidates to understand the reasons for using the weekly personal noise exposure; however, few did. The circumstances when this would be appropriate include, when the noise varies markedly from day-to-day and when the working week comprises of three or fewer days. Most candidates were able to use the ready reckoner provided and the information in the table to perform the calculation in part (b) (ii). Most arrived at the correct numerical value and gained almost all the marks available. However, some candidates did not express the answer in the correct units, dB(A) and therefore did not gain the mark available for it.

The final part of the question was not well answered. Candidates could gain marks for stating the position of the calculated weekly personal exposure compared to the legal requirements. Careless use of language often meant candidates missed out on marks as they were not clear which exposure action value or exposure limit value was being quoted.

Few candidates recognised the need to comment on the information in the table, as well as the calculated value of $L_{EP,w}$, therefore did not gain some of the marks available in part (b) (iii). The information in the table indicates that the exposure on Monday exceeds the upper exposure limit value, so immediate action must be taken to reduce exposure and the reason for this level of exposure must be identified.

-
- Question 11** An employer has an occupational health department that carries out vocational rehabilitation.
- (a) **Outline** the meaning of the term '*vocational rehabilitation*'. (2)
- (b) **Outline** the benefits of vocational rehabilitation to:
- (i) the employer; (4)
- (ii) an employee. (4)
- (c) An employee is required to take 12 months away from their work to receive treatment for a long-term medical condition.
- Outline** what the employer can do to assist the employee **BOTH** during the absence and at the time of their return to work. (10)
-

This question assessed candidates' knowledge and understanding of learning outcome 1.2: Outline the principles and benefits of the management of return to work including the role of outside support agencies.

The meaning of vocational rehabilitation was widely known and many candidates achieved the 2 marks available in part (a).

Candidates understood how to distinguish between the benefits of vocational rehabilitation for employers that was required in part (b) (i) and the benefits for employees that was required in part (b) (ii). Employers can benefit from increased productivity and morale, as well as reducing staff turnover and therefore costs. Employees benefit financially as they return to a full salary as well as gaining from social interaction in the workplace, an increased feeling of self-worth and feel assured that their employer cares.

The scenario presented in part (c) of the question resulted in some limited responses, and many candidates did not include a sufficient range of points for the 10 marks available. The employer can do much to assist the employee, including carrying out a return to work interview and planning a phased return to work. Making reasonable adjustments in the workplace and to the work pattern. It is also important the employer accurately records the reasons for absence and makes arrangements to have the sick pay entitlement paid to the employee. Keeping the employee informed of changes and developments in the workplace and with colleagues during the absence is also an important part of the assistance an employer can give.

APPENDIX



Noise exposure ready-reckoner (Weekly exposure)

<i>Daily noise exposure, $L_{EP,d}$ (dB)</i>	<i>Points</i>							<i>Total exposure points</i>	<i>Weekly noise exposure $L_{EP,w}$ (dB)</i>
	<i>Day 1</i>	<i>Day 2</i>	<i>Day 3</i>	<i>Day 4</i>	<i>Day 5</i>	<i>Day 6</i>	<i>Day 7</i>		
95	1000	1000	1000	1000	1000	1000	1000	5000	95
94	800	800	800	800	800	800	800	4000	94
93	630	630	630	630	630	630	630	3200	93
92	500	500	500	500	500	500	500	2500	92
91	400	400	400	400	400	400	400	2000	91
90	320	320	320	320	320	320	320	1600	90
89	250	250	250	250	250	250	250	1300	89
88	200	200	200	200	200	200	200	1000	88
87	160	160	160	160	160	160	160	800	87
86	130	130	130	130	130	130	130	630	86
85	100	100	100	100	100	100	100	500	85
84	80	80	80	80	80	80	80	400	84
83	65	65	65	65	65	65	65	320	83
82	50	50	50	50	50	50	50	250	82
81	40	40	40	40	40	40	40	200	81
80	32	32	32	32	32	32	32	160	80
79	25	25	25	25	25	25	25	130	79
78	20	20	20	20	20	20	20	100	78

© Crown copyright 2007

Examination technique

The following issues are consistently identified as the main areas in need of improvement for candidates undertaking Diploma level qualifications:

Candidates misread/misinterpreted the question

NEBOSH questions are systematically and carefully prepared and are subject to a number of checks and balances prior to being authorised for use in question papers. These checks include ensuring that questions set for the Diploma level qualifications relate directly to the learning outcomes contained within the associated syllabus guides. The learning outcomes require candidates to be sufficiently prepared to provide the relevant depth of answer across a broad range of topic areas. For example, a candidate could be asked about the causes of stress, or could be asked about the effects of stress, a question could require a response relating to the principles of fire initiation, or a question could require a response relating to the spread of fire. Therefore, a candidate should focus not only on the general topic area (eg stress, fire), but also the specific aspect of that topic to which the question relates.

Examiners suggest that while many candidates do begin their answer satisfactorily and perhaps gain one or two marks, they then lose sight of the question and include irrelevant information. Although further points included in an answer can relate to the general topic area, these points are not focused on the specific learning outcome and marks cannot be awarded. However, some candidates appear to misread or misinterpret several questions. This situation is more likely due to candidates preparing for the examination with a number of stock answers obtained through rote-learning, that again can provide answers that are loosely associated with the topic matter but do not provide answers specific to the question. Such an approach is clearly evident to an Examiner and demonstrates little understanding of the topic matter and marks are not awarded.

Examiners noted a tendency on the part of many candidates to write about things that were not asked for, despite the fact that guidance as to what to cover had been given in the question. An example is a question where candidates were instructed that there was no need to make reference to specific control measures and yet did so. In another example candidates wrote about selection of PPE when the question wording had clearly stated that this had already been undertaken. Another example was where candidates wrote about barriers to rehabilitation without relating them to the bio-psychosocial model, even though the question specifically asked them to do this.

Some candidates wrote large amounts of text on a single topic where only one mark could be awarded. Candidates did not recognise that the amount of marks awarded to each section gives an indication of the depth of the answer required.

It would therefore appear that a sizeable number of candidates misread some of the questions, to their disadvantage. This should be a relatively easy pitfall to overcome; candidates should ensure that they make full use of the 10 minutes reading time to understand what each question requires. Candidates are advised to allow sufficient time to read and re-read the question in order to determine the key requirements. Underlining or highlighting key words can assist in keeping focused and simple mind maps or answer plans can also be useful. An answer plan will often be helpful in ensuring that all aspects of the question are attended to; maps and plans should be kept simple so as not to use up too much examination time; if all aspects are not dealt with it will be difficult to gain a high mark. Candidates should not assume when they see a question that it is exactly the same as one that they may have seen in the past; new questions are introduced and old questions are amended. It is therefore of the utmost importance that questions are read carefully and the instructions that they give are followed.

It may help if, when preparing for the examinations, candidates write out their answers in full and ask a tutor or other knowledgeable third party to mark their work. In so doing, issues with understanding can be noted and remedial action taken.

Course providers and candidates should note that various means are used to draw attention to keywords in examination questions. These means include emboldened and italicised text and the use of words in capitals. These means are intended to draw the candidate's attention to these words and this emphasis should then be acted upon when making a response. These devices can often assist in giving guidance on how to set out an answer to maximise the marks gained. For example: **Identify THREE** things to be considered **AND** for **EACH**.....

Candidates often have a reasonable body of knowledge and understanding on the topic covered by a question, but they have not been able to apply this 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.

When preparing candidates for examination, or offering advice on examination technique, accredited course providers should stress that understanding the question requirements and the sub-structure of the response to the question is the fundamental step to providing a correct answer. Rather than learning the 'ideal answer' to certain questions effort would be better spent in guided analysis on what a question requires. The rote learning of answers appears to close the candidates' minds to the wider (and usually correct) possibilities.

Candidates repeated the same point but in different ways

There are instances where candidates repeat very similar points in their answers, sometimes a number of times. This is easily done in the stressful environment of the examination. However, once a point has been successfully made and a mark awarded for it, that mark cannot be awarded again for similar points made later in the answer. In some cases, particularly where questions had more than one part, candidates gave an answer to, say, part (b) of a question in part (a), meaning that they needed to repeat themselves in part (b) thus wasting time.

One possible reason for this might be that candidates have relatively superficial knowledge of the topic - a view supported by the low marks evident in some answers. It appears that, faced with a certain number of marks to achieve and knowing that more needs to be written, but without detailed knowledge, candidates appear to opt to rephrase that which they have already written in the hope that it may gain further marks. Another possible reason is a failure to properly plan answers, especially to the Section B questions - it would appear that candidates sometimes become 'lost' in their answers, forgetting what has already been written. It may be due either to a lack of knowledge (so having no more to say) or to limited answer planning, or to a combination of the two. When a valid point has been made it will be credited, but repetition of that point will receive no further marks. Candidates may have left the examination room feeling that they had written plenty when in fact they had repeated themselves on multiple occasions, therefore gaining fewer marks than they assumed.

Candidates sometimes think they have written a lengthy answer to a question and are therefore deserving of a good proportion of the marks. Unfortunately, quantity is not necessarily an indicator of quality and sometimes candidates make the same point several times in different ways. Examiners are not able to award this same mark in the mark scheme a second time. The chance of repetition increases when all marks for a question (eg 10 or 20) are available in one block. It can also happen when a significant proportion of the marks are allocated to one part of a question.

This issue is most frequently demonstrated by candidates who did not impose a structure on their answers. Starting each new point on a new line would assist in preventing candidates from repeating a basic concept previously covered, as well as helping them assess whether they have covered enough information for the available marks.

As with the previous area for improvement ('misreading the question') writing an answer plan where points can be ticked off when made, or structuring an answer so that each point made is clearly shown, for example by underlining key points, can be of great use. This technique aids candidates and makes it much clearer in the stress of the examination for candidates to see which points have been made and reduce the chances of the same point being made several times. Course providers are encouraged to set written work and to provide feedback on written answers, looking to see that candidates are able to come up with a broad range of relevant and accurate points; they should point out to candidates where the same point is being made more than once.

Candidates are advised to read widely. This means reading beyond course notes in order to gain a fuller understanding of the topic being studied. In that way, candidates will know more and be able to produce a broader and more detailed answer in the examination. Candidates may also find it helpful to read through their answers as they write them in order to avoid repetition of points.

Course providers should provide examination technique pointers and practice as an integral part of the course exercises. Technique as much as knowledge uptake should be developed, particularly as many candidates may not have taken formal examinations for some years.

Candidates produced an incoherent answer

Candidates produced answers that lacked structure, digressed from the question asked and were often incoherent as a result. In many cases, there seemed to be a scatter gun approach to assembling an answer, which made that answer difficult to follow. Answers that lack structure and logic are inevitably more difficult to follow than those that are well structured and follow a logical approach. Those candidates who prepare well for the unit examination and who therefore have a good and detailed knowledge commensurate with that expected at Diploma level, invariably supply structured, coherent answers that gain good marks; those candidates who are less well prepared tend not to do so.

Having good written communication skills and the ability to articulate ideas and concepts clearly and concisely are important aspects of the health and safety practitioner's wider competence. Candidates should be given as much opportunity as possible to practice their writing skills and are advised to practice writing out answers in full during the revision phase. This will enable them to develop their knowledge and to demonstrate it to better effect during the examination. It may help if candidates ask a person with no health and safety knowledge to review their answers and to see whether the reviewer can understand the points being made.

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.

Candidate's 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, Examiners have independently identified and commented on this as an area of concern. While 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, 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, eg by the provision of a scribe or the use of a keyboard. Candidates with poorly legible handwriting need to understand this constraint early in their course of studies in order for them to minimise the effect this may have.

NEBOSH recommends to accredited course providers that candidates undertaking this qualification should reach a minimum standard of English equivalent to an International English Language Testing System score of 7.0 or higher in IELTS tests in order to be accepted onto a Diploma level programme.

For further information please see the latest version of the IELTS Handbook or consult the IELTS website: <https://www.ielts.org/about-the-test/test-format>

Candidates wishing to assess their own language expertise may consult the IELTS website for information on taking the test: <http://www.ielts.org>

Course providers are reminded that they must ensure that these standards are satisfied or additional tuition provided to ensure accessible and inclusive lifelong learning.

Candidates did not answer all the questions

It has been noted that a number of candidates do not attempt all of the questions on the examination and of course where a candidate does not provide an answer to a question, no marks can be awarded. Missing out whole questions immediately reduces the number of possible marks that can be gained and so immediately reduces the candidate's opportunity for success. There can be several reasons for this issue: running out of the allocated time for the examination, a lack of sufficient knowledge necessary to address parts of some questions, or in other cases, some candidates have a total lack of awareness that the topic covered in certain questions is even in the syllabus.

If candidates have not fully studied the breadth of the syllabus they may find they are not then equipped to address some of the questions that are on a question paper. At that late stage there is little a candidate can do to address this point. Responsibility for delivering and studying the full breadth of the syllabus rests with both the course provider and the individual candidates and both must play their part to ensure candidates arrive at the examination with a range of knowledge across all areas of the syllabus.

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 questions.

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.

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

It was apparent in those questions that were similar to those previously set, that the candidates' thought processes were constrained by attachment to memorised answer schemes that addressed different question demands.

While knowledge of material forms a part of the study for a Diploma-level qualification, a key aspect being assessed is a candidate's **understanding** of the topic and reciting a pre-prepared and memorised answer will not show a candidate's understanding. In fact, if a candidate gives a memorised answer to a question that may look similar, but actually is asking for a different aspect of a topic in the syllabus, it shows a lack of understanding of the topic and will inevitably result in low marks being awarded for that answer.

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:

Explain

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

This command word requires a demonstration of an understanding of the subject matter covered by the question. Superficial answers are frequently given, whereas this command word demands greater detail. For example, candidates are occasionally able to outline a legal breach but do not always explain why it had been breached. A number of instances of candidates simply providing a list of information suggests that while candidates probably have the correct understanding, they cannot properly express it. Whether this is a reflection of the candidate's language abilities, in clearly constructing a written explanation, or if it is an outcome of a limited understanding or recollection of their teaching, is unclear. It may be linked to a general societal decline in the ability to express clearly explained concepts in the written word, but this remains a skill that health and safety professionals are frequently required to demonstrate.

When responding to an 'explain' command word it is helpful to present the response as a logical sequence of steps. Candidates must also be guided by the number of marks available. When asked to 'explain the purposes of a thorough examination and test of a local exhaust ventilation system' for 5 marks, this should indicate a degree of detail is required and there may be several parts to the explanation.

Candidates are often unable to explain their answers in sufficient detail or appear to become confused about what they want to say as they write their answer. For example, in one question many candidates explained the difference between the types of sign, explaining colours and shapes of signs without explaining how they could be used in the depot, as required by the question.

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.

The command word 'describe' clearly requires a description of something. The NEBOSH guidance on command words says that 'describe' requires a detailed written account of the distinctive features of a subject such that another person would be able to visualise what was being described. Candidates have a tendency to confuse 'describe' with 'outline'. This means that less detailed answers are given that inevitably lead to lower marks. This may indicate a significant lack of detailed knowledge and/or a lack of ability to articulate the course concepts clearly. Candidates should aim to achieve a level of understanding that enables them to describe key concepts.

Some candidates see the command word 'describe' as an opportunity to fill out an answer with irrelevant detail. If a person was asked to describe the chair they were sitting on, they would have little difficulty in doing so and would not give general unconnected information about chairs in general, fill a page with everything they know about chairs or explain why they were sitting on the chair. Candidates should consider the general use of the command word when providing examination answers.

Outline

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

This is probably the most common command word but most candidates treat it like 'identify' and provide little more than a bullet pointed list. As the NEBOSH guidance on command words makes clear, 'outline' is not the same as 'identify' so candidates will be expected to give more detail in their answers. 'Outline' requires a candidate to indicate *'the principal features or different parts of'* the subject of the question.

An outline is more than a simple list, but does not require an exhaustive description. Instead, the outline requires a brief summary of the major aspects of whatever is stated in the question. 'Outline' questions

usually require a range of features or points to be included and often 'outline' responses can lack sufficient breadth, so candidates should also be guided by the number of marks available. Those candidates who gain better marks in questions featuring this command word give brief summaries to indicate the principal features or different parts of whatever was being questioned. If a question asks for an outline of the precautions when maintaining an item of work equipment, reference to isolation, safe access and personal protective equipment would not be sufficient on their own to gain the marks available. A suitable outline would include the meaning of isolation, how to achieve safe access and the types of protective clothing required.

Identify

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

Candidates responding to identify questions usually provide a sufficient answer. Examiners will use the command word 'identify' when they require a brief response and in most cases, one or two words will be sufficient and further detail will not be required to gain the marks. If a question asks '**identify** typical symptoms of visual fatigue', then a response of 'eye irritation' is sufficient to gain 1 mark. If having been asked to identify something and further detail is needed, then a second command word may be used in the question.

However, in contrast to 'outline' answers being too brief, many candidates feel obliged to expand 'identify' answers into too much detail, with the possible perception that more words equals more marks. This is not the case and course providers should use the NEBOSH guidance on command words within their examination preparation sessions in order to prepare candidates for the command words that may arise.

Give

Give: To provide short, factual answers.

'Give' is usually in a question together with a further requirement, such as '**give** the meaning of' or '**give** an example in **EACH** case'. Candidates tend to answer such questions satisfactorily, especially where a question might ask to 'identify' something and then 'give' an example. The candidate who can answer the first part, invariably has little difficulty in giving the example.

Comment

Comment: To give opinions (with justification) on an issue or statement by considering the issues relevant to it.

For example, if candidates have already calculated two levels of the exposure to wood dust and are then asked to comment on this the issues would include the levels of exposure they had found, and candidates would need to give their opinion on these, while considering what is relevant. The question guides on what may be relevant for example, did it meet the legal requirements, did it suggest controls were adequate, so based on that guidance, did exposure need to be reduced further or did anything else need to be measured or considered? If candidates comment with justification on each of these areas they would gain good marks in that part of question.

Few candidates are able to respond appropriately to this command word. At Diploma level, candidates should be able to give a clear, reasoned opinion based on fact.

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: <https://www.nebosh.org.uk/i-am/a-student/> - from this page the document can be found by clicking on the relevant Qualification link, then on the 'Resources' tab.