
Examiners' Report

NEBOSH NATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY

UNIT B: HAZARDOUS AGENTS IN THE WORKPLACE

JANUARY 2020



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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 learners annually and are offered by over 600 Learning Partners, 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 learners and Learning Partners 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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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 learners 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 learners, 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 2020.

Feedback is presented in these key areas: responses to questions, examination technique and command words and is designed to assist learners and Learning Partners prepare for future assessments in this unit.

Learners and Learning Partners 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** Hand-arm vibration syndrome (HAVS) can be caused by frequent and prolonged use of hand-held power tools.
- (a) **Identify** symptoms of HAVS. (2)
- (b) **Outline** control measures that could help reduce the risk of employees developing HAVS when using hand-held power tools. (8)

This question assessed learners' knowledge and understanding of learning outcomes 6.8: Explain the principles and methods of controlling vibration and vibration exposure; and 6.6: Explain the effects of vibration on the individual.

Part (a) was answered well, with nearly all learners able to identify at least two symptoms of HAVS.

In part (b) many learners did not outline the control measures and instead just identified these, limiting their marks. Only stating that job rotation should be used, is not necessarily a control measure in this situation, unless the job rotation is to tasks that do not expose the worker to hand-arm vibration from another source.

Sometimes the control measures indicated were inaccurate. For example: stating that anti-vibration gloves should be worn was not awarded marks. Gloves are a helpful control measure if worn to keep hands warm, as this improves blood circulation.

Many learners did provide a good range of control measures including replacing or using tools with a lower vibration magnitude to reduce the overall vibration exposure. Learners often omitted to mention that loading on the hands, arms or wrists could be reduced by using jigs or suspension systems for power tools.

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- Question 2** **Outline** reasons why respiratory protective equipment (RPE) may not provide the level of protection that is stated by the manufacturer when it is being used. (10)

This question assessed learners' 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.

Most learners provided a good range of reasons why the RPE may not provide the level of protection stated. Common responses included the RPE was poorly fitted or incompatible with other PPE being worn. Many recognised that users often remove the RPE and this affects the level of protection, even if this only happens for short periods of time.

Often learners did not consider that the type of RPE might be 'powered RPE' and therefore protection levels can be reduced because there is poor airflow.

Some learners did not address why the level of protection is not as stated by the manufacturer and instead answered a different question addressing what features to consider when selecting RPE. This difference in approach sometimes resulted in marks not being achieved.

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- Question 3** Animal studies can be used to assess acute and chronic effects of hazardous substances.
- (a) **Outline** the meaning of the following terms used in animal studies:
- (i) NOAEL; (2)
 - (ii) LD50. (2)
- (b) **Outline** the advantages and disadvantages of using animal studies to investigate whether a substance may be hazardous to humans. (6)
-

This question assessed learners' knowledge and understanding of learning outcome 2.4: Outline the role of epidemiology and toxicological testing.

Most learners provided better answers to part (b) than part (a) of this question. Answers to part (a) were mixed with some learners being unfamiliar with these two terms that are relevant in animal studies.

NOAEL is the no-observed adverse effect level (not limit). LD50 is the Lethal Dose 50% or the median lethal dose.

There are a wide range of possible advantages and disadvantages of using animal studies and learners were not constrained to outlining three of each to achieve the six marks available in part (b).

The most common disadvantage outlined was the ethical consideration or possible adverse public opinion to conducting animal studies. Most learners cited there being no need to put humans at risk as an advantage. Even though it was a term used in part (a), few if any learners mentioned that a possible advantage of animal studies is that these are used to determine a NOAEL.

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- Question 4**
- (a) **Give** the meaning of the term '*work-related violence*'. (2)
- (b) **Outline** practical measures to help reduce violence towards a nurse who visits patients in their homes. (8)
-

This question assessed learners' knowledge and understanding of learning outcomes 8.4: Explain the identification and control of work-related violence/aggression with reference to legal duties; and 8.3: Explain the scope, effects and causes of work-related violence/aggression.

Most learners gave a satisfactory meaning of the term '*work-related violence*' (WRV), indicating it occurred when a person was either assaulted, threatened, injured, abused or harmed as a direct result of their work. Further detail could have been added which indicated that WRV was behaviour or action that departs from reasonable conduct.

Part (b) specifically asked for practical measures to help reduce WRV but some learners wrote about policies, risk assessments and other more strategic or organisational aspects of managing WRV.

Practical measures that were frequently included in answers were carrying a means of communication and parking vehicles in a way that made it easy to leave. Most learners were able to provide a good range of practical measures. However, many missed out important practical measures such as being on time and identifying an exit route when inside a patient's home.

Question 5 Employees are exposed to high levels of heat and steam from a manufacturing process.

- (a) **Identify TWO** parameters that could be *measured* when making an assessment of the thermal environment. (2)
- (b) **Outline** ways of reducing thermal stress among employees during the manufacturing process. (8)
-

This question assessed learners' knowledge and understanding of learning outcome 10.1: Explain the need for, and factors involved in, the provision and maintenance of temperature in both moderate and extreme thermal environments.

Part (a) required learners to identify two of a possible four environmental parameters, all of which are named in the syllabus under learning outcome 10.1. Many learners were not able to identify these with sufficient accuracy to achieve the marks available. For example, simply stating 'humidity' or 'temperature' is inaccurate.

Answers to part (b) were more successful with learners outlining a range of ways to reduce the thermal stress during the manufacturing process. Eliminating the risk by eliminating the manufacturing process was not an appropriate response.

Instead, ventilation or de-humidifying the work environment and providing breathable or lightweight clothing are all relevant ways to reduce thermal stress. Giving training, information and instruction was a valid answer but only if that was qualified by indicating what that should include, for example training on how to work safely in a hot environment.

Few learners considered the importance of managing work rate in the hot environment and in order to do this, an adequate number of employees would be necessary. Alternatively, minimising physical activities perhaps through the design of the work would also be helpful.

Question 6

Individuals with a health or disability condition often find barriers to staying in or returning to work. The bio-psychosocial model is used to classify these barriers to work.

- (a) *With specific reference to this model, **outline** what these barriers are, for a person with a health or disability condition.* (3)
 - (b) **Outline** what benefits these individuals can gain from being in work, having overcome these barriers. (3)
 - (c) **Identify** national schemes and/or organisations that may support these individuals to stay in or return to work. (4)
-

This question assessed learners' 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.

A significant number of learners appeared to be unfamiliar with the bio-psychosocial model and had difficulty giving a sufficient answer to part (a) and achieved the majority of marks in part (b) of this question.

The barriers to be referred to in part (a) were the biological, psychological and social barriers, all of which can affect a work situation. For example, a person with a health or disability condition can face psychological barriers as they are fearful, concerned or feel uncomfortable about the returning to work or being in work in case it worsens their condition.

Answers to part (b) were generally good with most learners outlining benefits that result from being in work, such as feeling valued and contributing to society,

There was an opportunity to gain up to four marks in part (c) by identifying four national (not local) schemes or organisations. Some of these are listed in the syllabus, learning outcome 1.2, for example Access to Work. Other possible responses could have been, a national charity such as RNIB (Royal National Institute of Blind People), etc.

Question 7 Employees in a large manufacturing organisation are exposed to a solvent by inhalation, throughout their 8-hour shift.

- (a) (i) Use the data in the table below to **calculate** the 8-hour time-weighted average (TWA) exposure to a solvent for an employee. *Your answer should include the detail of calculation to show your understanding of how the exposure is determined.* (7)

Working period (Total shift time = 8 hours)	Tasks carried out by employee	Exposure to solvent (ppm)
08.00 – 10.30	Weighing ingredients	140
10.30 – 10.45	Break	0
10.45 – 12.45	Charging the mixers	100
12.45 – 13.45	Lunch	0
13.45 – 15.45	Cleaning equipment	25
15.45 – 16.00	Assisting maintenance staff	0
Assuming that exposure is zero during all other times.		
Workplace exposure limit (WEL) for the solvent is 100ppm (long-term exposure limit (LTEL) 8-hour time-weighted average (TWA)).		

- (ii) The organisation decides to change the working patterns so that each employee does a single task for a 12-hour shift. An employee is assigned to the task of charging the mixers for their 12-hour shift. Within the shift, they are allowed two 45-minute breaks where their exposure is assumed to be zero.
- Using this information and the relevant data above, **calculate** the 8-hour TWA exposure for this employee. (2)
- (iii) **Outline** the legal implications of this change in the working pattern. (2)
- (b) The occupational health department at the organisation needs to decide whether to carry out health surveillance for employees exposed to this solvent.
- (i) **Outline** the purposes of health surveillance. (4)
- (ii) **Suggest ONE** type of health surveillance that may be appropriate for the employees using this solvent. (1)
- (iii) *Other than* health surveillance, **identify FOUR** functions that may be carried out by an occupational health service in a large manufacturing organisation. (4)

This question assessed learners' knowledge and understanding of learning outcomes 4.1: Explain how workplace exposure limits are used in the workplace; 4.2: Outline the methods for sampling of airborne contaminants; and 1.3: Outline the management of occupational health (including the practical and legal aspects).

Many learners who answered this question provided good answers. In parts (a) (i) and (a) (ii) the correct methodologies were applied to the calculation and if any marks were missed, these were for simple mathematical slips. In these cases, learners were still able to gain most of the marks available. That is why it is so important to include the detail of the calculation to show the methodology is understood. It is also necessary to remember that the number answer requires units, for it to have meaning and be given marks. In this case the units are ppm.

In part (a) (iii) learners did not always gain the full two marks available. Most learners recognised that the change in working pattern described in part (a) (ii) affected the workplace exposure limit (WEL). It was also relevant to outline that adequate control, as required by the COSHH regulations, was no longer achieved and that additional control measures must be introduced.

The second part of the question switched attention to health surveillance and the role of occupational health in this manufacturing scenario where exposure to a solvent occurs. In part (b) (i) a number of learners had difficulty giving a full outline of the purpose of health surveillance, with many limiting their answer to identifying early signs of health problems. Few learners outlined that health surveillance educates employees about health-related risks in their workplace.

For part (b) (ii) learners were able to identify a type of health surveillance that would be appropriate in this scenario, with most indicating lung function tests (spirometry) as the example.

In part (b) (iii) there were a wide range of possible functions of an occupational health department that could have been identified including maintaining health records for employees, or liaising with enforcement authorities. A few learners did not note the italicised guidance in the question and identified health surveillance as one of the functions.

Question 8

A large livestock farm employs a number of people who are involved in caring for animals, cleaning out animal enclosures and disposing of waste materials.

During such work employees may be exposed to zoonoses.

- (a) **Give** the meaning of the term 'zoonose'. (2)
- (b) **Outline** how and when the farm employees are likely to be exposed to:
 - (i) cryptosporidiosis, (3)
 - (ii) leptospirosis. (3)
- (c) **Outline** a range of practical control measures that should be used to minimise the risks associated with exposure to zoonoses. (10)
- (d) **Identify TWO** other zoonoses that employees working on the farm could be exposed to. (2)

This question assessed learners' 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.

In part (a) few learners said that the zoonose will cause ill-health in humans but may not cause ill-health in the animals.

The two examples of zoonoses in part (b) are different in their route of exposure and learners were expected to recognise this, when outlining how and when farm employees are likely to be exposed. For cryptosporidiosis exposure occurs when contacting sheep or cattle.

Exposure to leptospirosis can occur through cattle urine splashes to the eyes or the inhalation of droplets of cattle urine. Some learners were too vague in the answers given and sometime confused these two distinct zoonoses.

There are a wide range of practical measures that can be used to minimise the risks of exposure, but many learners found part (c) challenging and either limited the range of their answer, or did not sufficiently outline these measures. Good hygiene is a key part of the practical measures, but the outline of this was often vague and insufficient. Hand washing facilities need to be separate from animal areas and there needs to be both hot water and soap provided.

Controls relating to the animals include keeping animal areas clean and free from faeces as much as is possible. Vaccination of animals is sometimes possible to try to control the disease in animals. Some learners placed an over reliance on this control measure and did not provide a sufficient range of other hygiene related controls in their answers.

In answers to part (d) most learners were able to identify two other zoonoses and gained both marks available.

Question 9	(a) Identify possible health effects from exposure to ionising radiation. (5)
	(b) Outline control measures that should be in place where employees may be exposed to ionising radiation. (15)

This question assessed learners' knowledge and understanding of learning outcome 7.3: Outline the effects of exposure to ionising radiation, its measurement and control.

Most learners gained marks in part (a) identifying five different health effects from exposure to ionising radiation including short term or longer terms health effects such as burns or cancer.

There is a wide range of possible control measures that could have been included in answers to part (b). Many learners wrote lengthy answers and gained well over half of the fifteen marks available. Sometimes learners repeated themselves, but marks could only be awarded once. This highlights the importance of making a brief answer plan before answering a question where there are a large number of marks available within one part of the question.

Control measures that should be in place are both organisational and operational, and include keeping inventory control of radiation sources and competent people in place such as radiation protection advisors and supervisors. Applying the distance, time and shielding approach to control measures is also relevant and remotely handling radiation sources. Minimising the number of people exposed and the time for which they are exposed is also relevant.

Other practical control measures include the safe disposal of radioactive materials.

Question 10 An employer has selected hearing protection based on the information below:

Sound pressure level	91 dB(C)
Single number rating (SNR) for selected hearing protection	29

- (a) **Demonstrate** that a realistic estimate of the A-weighted sound pressure level entering the ear of the operators wearing this hearing protection is 66 dB(A). (4)
- (b) **Explain** if the attenuation provided by this hearing protection is appropriate. (2)

Two other methods of calculating hearing protection attenuation are HML and Octave band analysis.

- (c) For **EACH** of these methods, **outline** the data required to be able to calculate these attenuations for hearing protection. (6)
- (d) *Other than* noise attenuation, **outline** other factors the employer should consider when selecting hearing protection. (8)

This question assessed learners' knowledge and understanding of learning outcome 6.4: Explain the principles and methods of controlling noise and noise exposure.

This question focused only on hearing protection as a means of controlling noise exposure, so learners needed to feel confident they had sufficient depth of knowledge on this aspect of the syllabus. Few learners answered this question, perhaps indicating a limited level of knowledge of this specific aspect of noise control.

Part (a) required learners to demonstrate that the exposure at the ears is calculated by subtracting the SNR value from the sound pressure level in dB(C). This results in an answer in dB(A). Further marks were available for correcting this number by +4 dB to account for real world factors.

In part (b) the calculated overprotection based on the realistic estimate of 66dB(A), given in part (a), compared with the HSE nominated figure of less than 70dB, means that workers may not be able to hear warning sounds in the work environment.

Some learners had difficulty answering part (c) and some did not attempt this part. The data required to calculate HML includes the sound pressure levels in the work area and the range of frequencies for the octave bands.

In part (d) a few learners mistakenly wrote about other noise control measures rather than other things to consider when selecting hearing protection and so their answers were not relevant. There were a wide range of possible things to consider including compatibility with other protective equipment. Few learners referred to the environmental factors or the need to communicate when wearing hearing protection is also an important factor to consider.

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- Question 11** A parcel sorting depot is experiencing a high number of manual handling-related injuries. The employees handle a large number of different parcels and packages each day.
- (a) **Identify** the different types of hazard that may be associated with the loads being handled. (6)
- (b) In order to reduce the amount of manual handling required, the employer has decided to invest in a range of non-powered handling devices (trolleys, trucks, etc).
- Outline** what should be considered when *selecting and introducing* the use of these non-powered devices. (10)
- (c) **Outline** a range of *other* control measures that could be introduced to minimise the risks associated with manual handling in the parcel sorting depot. (4)
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This question assessed learners' knowledge and understanding of learning outcome 9.2: Explain the assessment and control of risks from repetitive activities, manual handling and poor posture.

Answers to parts (a) and (c) were not as confident as those to part (b). In part (a) some learners did not focus on hazards relating to the load and instead considered hazards relating to the environment, task or individual. These were not required. Hazards specifically relevant to the load include weight, which may be too heavy, those with an awkward shape or with contents likely to shift.

There is a wide range of things to consider for non-powered devices such as trolleys or trucks. Many learners gave good answers to part (b) and included points relevant to both selection and introduction of these devices. For example: consulting with the workforce, and considering the views of other users through customer feedback and reviews is helpful. Thinking about the work environment where these devices will be used includes considering features such as the space available to manoeuvre the devices.

Considering the truck or trolley design is very important, for example the height of the handles.

In part (c) learners needed to consider other ways to reduce the risks from manual handling in this particular work situation. Marking up loads with information about weight and perhaps using team lifting with heavier items can be helpful.

Examination technique

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

Learners 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 learners to be sufficiently prepared to provide the relevant depth of answer across a broad range of topic areas. For example, a learner 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 learner 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 learners 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 learners appear to misread or misinterpret several questions. This situation is more likely due to learners 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 learners 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 learners were instructed that there was no need to make reference to specific control measures and yet did so. In another example learners wrote about selection of PPE when the question wording had clearly stated that this had already been undertaken. Another example was where learners wrote about barriers to rehabilitation without relating them to the bio-psychosocial model, even though the question specifically asked them to do this.

Some learners wrote large amounts of text on a single topic where only one mark could be awarded. Learners 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 learners misread some of the questions, to their disadvantage. This should be a relatively easy pitfall to overcome; learners should ensure that they make full use of the 10 minutes reading time to understand what each question requires. Learners 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. Learners 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, learners 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.

Learning Partners and learners 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 learner'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**....

Learners 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 learners for examination, or offering advice on examination technique, Learning Partners 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 learners' minds to the wider (and usually correct) possibilities.

Learners repeated the same point but in different ways

There are instances where learners 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, learners 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 learners 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, learners 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 learners 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. Learners 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.

Learners 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 learners 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 learners who did not impose a structure on their answers. Starting each new point on a new line would assist in preventing learners 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 learners and makes it much clearer in the stress of the examination for learners to see which points have been made and reduce the chances of the same point being made several times. Learning Partners are encouraged to set written work and to provide feedback on written answers, looking to see that learners are able to come up with a broad range of relevant and accurate points; they should point out to learners where the same point is being made more than once.

Learners 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, learners will know more and be able to produce a broader and more detailed answer in the examination. Learners may also find it helpful to read through their answers as they write them in order to avoid repetition of points.

Learning Partners 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 learners may not have taken formal examinations for some years.

Learners produced an incoherent answer

Learners 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 learners 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 learners 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. Learners 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 learners 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.

Learners 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 learner.

Generally, there has been an improvement in response to command words, but a number of learners 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 learners 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.

Learner's handwriting was illegible

It is unusual to have to comment on this aspect of learner 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 learners 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 learners 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. Learning Partners should encourage and give opportunities for learners 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. Learners 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 Learning Partners that learners 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>

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

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

Learners did not answer all the questions

It has been noted that a number of learners do not attempt all of the questions on the examination and of course where a learner 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 learner'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 learners have a total lack of awareness that the topic covered in certain questions is even in the syllabus.

If learners 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 learner can do to address this point. Responsibility for delivering and studying the full breadth of the syllabus rests with both the Learning Partner and the individual learners and both must play their part to ensure learners 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, learners 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, learners 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 learners 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.

Learners 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 learners' 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 learner's **understanding** of the topic and reciting a pre-prepared and memorised answer will not show a learner's understanding. In fact, if a learner 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 learners:

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, learners are occasionally able to outline a legal breach but do not always explain why it had been breached. A number of instances of learners simply providing a list of information suggests that while learners probably have the correct understanding, they cannot properly express it. Whether this is a reflection of the learner'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. Learners 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.

Learners 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 learners 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. Learners 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. Learners should aim to achieve a level of understanding that enables them to describe key concepts.

Some learners 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. Learners 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 learners 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 learners will be expected to give more detail in their answers. 'Outline' requires a learner 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 learners should also be guided by the number of marks available. Those learners 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.

Learners 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 learners 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 Learning Partners should use the NEBOSH guidance on command words within their examination preparation sessions in order to prepare learners 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'. Learners tend to answer such questions satisfactorily, especially where a question might ask to 'identify' something and then 'give' an example. The learner 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 learners 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 learners 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 learners comment with justification on each of these areas they would gain good marks in that part of question.

Few learners are able to respond appropriately to this command word. At Diploma level, learners 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-learner/> - from this page the document can be found by clicking on the relevant Qualification link, then on the 'Resources' tab.