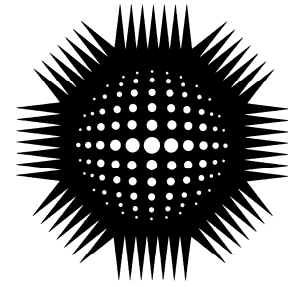


THE NATIONAL EXAMINATION BOARD IN  
OCCUPATIONAL SAFETY AND HEALTH

NEBOSH NATIONAL DIPLOMA IN  
OCCUPATIONAL HEALTH AND SAFETY



nebosh

Unit A: Managing health and safety

TUESDAY 5 JULY 2011  
3 hours, 0930 to 1230

*10 minutes reading time is allowed before the start of this examination. You may not write anything during this period.*

Answer both Section A and Section B

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SECTION A

This section contains six questions. Answer **ALL SIX** questions.

All questions carry equal marks.

The maximum marks for each question, or part of a question, are shown in brackets.

You are advised to spend about **15 minutes** on each question.

Start each answer on a new page.

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- 1     **Outline** ways in which a health and safety practitioner could *evaluate* and *develop* their own competence. (10)
- 2     (a)     **Outline** how task analysis may be used to help with hazard identification as part of a risk assessment process. (2)
- (b)     **Giving** a practical example in **EACH** case, **explain** why the number of people exposed to a hazard could affect **BOTH** the probability **AND** severity components of risk. (4)
- (c)     **Identify** types of external UK publications to which an employer may refer when deciding whether the level of risk associated with a specific hazard has been reduced to an acceptable level. In **EACH** case, **outline** how the publication may assist in deciding on acceptable levels of risk. (4)

- 3 (a) A mixing vessel that contains solvent and product ingredients must be thoroughly cleaned every two days. Cleaning requires an operator to enter the vessel for which a permit-to-work is required. During a recent audit of permit records it has been discovered that many permits have not been completed correctly or have not been signed back.
- Outline** possible reasons why the permit system is not being properly adhered to. (5)
- (b) A sister company operating the same process has demonstrated that the vessel can be cleaned by installing fixed, high pressure spray equipment inside the vessel which would eliminate the need for vessel entry. You are keen to adopt this system for safety reasons but the Board has requested a cost-benefit analysis of the proposal.
- Outline** the principles of cost-benefit analysis in such circumstances. (5)  
*Detailed discussion of individual cost elements is **not** required.*
- 4 (a) A prosecution under the Health and Safety at Work etc Act 1974 may be brought summarily or on indictment.
- (i) **Identify** the criminal courts that may hear the prosecution when it is brought for the first time. (2)
- (ii) **Outline** the routes of appeal that could be pursued following a conviction. (6)
- (b) A matter involving the interpretation of European law may be referred to the European Court of Justice for a preliminary ruling.
- Identify** the bodies or parties who have a legal right to initiate such a referral. (2)
- You may answer for the court systems in England and Wales or Scotland or Northern Ireland.*
- 5 A child is struck by a train after getting onto a railway line through a section of damaged fencing. The fencing had been damaged for some time and the damage had been reported to the body in control of the railway two months previously.
- In relation to the body that is occupying or in control of the railway in these circumstances:
- (a) **identify** the statute that creates civil liability; (1)
- (b) **outline** the nature of the duties **AND** the key provisions of this statute. (9)

- 6 Witness interviews are an important part of the information-gathering process of an accident investigation.

**Describe** the requirements of an interview process that would help to obtain the best quality of information from witnesses.

(10)

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## SECTION B

This section contains five questions. Answer **THREE** questions only.

All questions carry equal marks.

The maximum marks for each question, or part of a question, are shown in brackets.

You are advised to spend about **30 minutes** on each question.

Start each answer on a new page.

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- 7 (a) The results of accident / incident ratio studies are often depicted as a triangle.

(i) **Explain** why the outcomes are often depicted as a triangle. (2)

(ii) **Explain** how raw accident / incident data can be converted into the type of results which are normally shown in an accident / incident ratio study triangle. (3)

(iii) **Explain** the reasons why, in practice, the ratios of accident / incident outcomes in an organisation always follow this triangular pattern. (4)

(iv) **Explain** the implications of accident / incident ratio studies for accident and incident investigation arrangements and resourcing. (5)

- (b) A business has undertaken a study of the numbers of different types of accidents and incidents reported in a 12 month period. The results are shown below as raw numbers:

Incident outcome	Numbers
Major injury	4
Lost time accident	10
First-aid treatment	26
Property damage	25
Near miss	45

**Outline** the conclusions that might be drawn from this data when compared with the results of published accident / incident ratio studies. (6)

- 8 An employer engages a contractor to design, build and install a passenger lift for use by its employees and customers. Shortly after the lift was commissioned it failed in service injuring a number of customers who were using it at the time. Investigation revealed that the lift had not been designed to recognised standards and the contractor was not competent to design or install such equipment.
- (a) **Outline** the general types of health and safety related information that the employer should have obtained from the contractor (prior to their appointment) to ensure that the contractor was competent to safely design and install the lift. (10)
- (b) As a result of the failure of the lift and the injuries caused, both the employer and the contractor were prosecuted. It was decided to prosecute the contractor under Section 6 of the Health and Safety at Work etc Act 1974. **Explain** why this section of the Act is relevant to this scenario **AND describe** the requirements of the Section that would be relevant to the design and installation of the lift. (10)
- 9 A train driver has passed a stop signal resulting in a collision with another train. Investigation of the incident concluded that the driver had seen the signal gantry but had not perceived the relevant signal correctly. There had been a number of previous similar incidents at this signal gantry, although the driver was not aware of this.
- The driver concerned was inexperienced and had received no local route training or information. The signal was hard to see being partly obscured by a bridge on approach and affected by strong sunlight. In addition, the arrangement of the lights on the signal was a non-typical formation. The driver had approached the signal with no expectation from previous signals that it would be on stop.
- (a) **Give** practical reasons why the driver may not have perceived the signal correctly **AND** make reference to a suitable model of perception as part of your answer. (7)
- (b) **Outline** the steps that could be taken to reduce the likelihood of a recurrence of this incident. (13)
- 10 (a) **Outline** how safety *tours* could contribute to improving health and safety performance **AND** to improving health and safety culture within a company. *Discussion of the specific health and safety requirements, problems or standards that such tours may address is not required.* (10)
- (b) **Outline** the issues that should be considered when planning a health and safety *inspection* programme. *Information on the specific workplace conditions or behaviours that might be covered in an inspection is not required.* (10)

- 11** A fast-growing manufacturing company employs 150 people. Health and safety standards at the company are poor as arrangements have developed in an unplanned way without professional advice. The company has managed to avoid any serious accidents and staff at all levels do not seem particularly concerned. However two employees have recently experienced near miss incidents and have complained jointly to the Health and Safety Executive (HSE).

A subsequent visit by an HSE inspector in connection with the near-miss incidents has resulted in the issue of three improvement notices. The Managing Director wishes to dismiss the two employees whom he has described as troublemakers.

- (a) **Explain** the advice you would give the Managing Director with respect to the proposed disciplinary action against the employees who have complained. (5)
- (b) **Outline** the steps that could be taken to *gain the support* of the workforce in improving the health and safety culture within the company. (15)