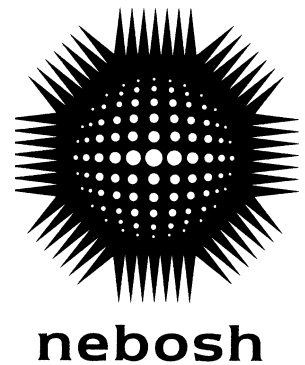


**NEBOSH**

**MANAGEMENT OF HEALTH AND SAFETY**

**UNIT IG1:**

For: NEBOSH International General Certificate in Occupational Health and Safety



## **Open Book Examination**

**Available for 24 hours**

### **Guidance to learners**

This is an open book examination. It is not invigilated, and you are free to use any learning resources to which you have access, eg your course notes, or a website, etc.

By submitting this completed assessment for marking, you are declaring it is entirely your own work. Knowingly claiming work to be your own when it is someone else's work is malpractice, which carries severe penalties. This means that you must **not** collaborate with or copy work from others. Neither should you 'cut and paste' blocks of text from the Internet or other sources.

The examination begins with a scenario to set the scene. You will then need to complete a series of tasks based on this scenario. Each task will consist of one or more questions.

Your responses to **most** of these tasks should wholly, or partly, draw on relevant information from the scenario. The task will clearly state the extent to which this is required.

The marks available are shown in brackets to the right of each question, or part of each question. This will help guide you to the amount of information required in your response. In general, one mark is given for each correct technical point that is clearly demonstrated. Avoid writing too little as this will make it difficult for the Examiner to award marks. Single word answers or lists are unlikely to gain marks as this would not normally be enough to show understanding or a connection with the scenario.

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You are **not** expected to write more than 3000 words in total.

Try to distribute your time and word count proportionately across all tasks.

It is recommended that you use the answer template.

Please attempt **ALL** tasks.

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## SCENARIO

You are an experienced health and safety manager (HSM) working for a small chemical organisation. The organisation makes one product, a paint, that is available in different colours. On site are the purchasing, sales, product quality control, maintenance, warehousing, and production departments.

You have implemented a health and safety management system that includes internal auditing. There is a team of internal auditors from the different departments. This enables the auditors to be independent of the department being audited. One auditor recently left the organisation, and Worker A has volunteered to fill their role. As part of their training, Worker A will accompany you on your next health and safety audit. You look at the audit timetable and see that the next scheduled audit is in a month's time, for the production department processes.

The production department is led by the production manager (PM), who reports directly to the senior management team. There are 3 supervisors and 15 workers in the production department. The product is selling well, and the production team is working at full capacity, often having to work extra shifts. They also use temporary workers from an employment agency when the workforce is unable to keep up with demand.

### Audit planning

You meet with Worker A, explain the organisation's written audit procedure, and plan the audit. You begin by sending an email to the PM to inform them of the audit and suggest suitable dates. To carry out the audit, you plan to observe the different stages of the production process:

1. Delivery and storage of raw materials (chemicals) in the production area.
2. The production process: filling, mixing, quality control testing, and dispensing.
3. Moving of finished goods to the warehouse.

A week later, you have not had a reply from the PM about the planned audit. When by chance you meet them in a corridor, you remind them of the audit, and you suggest dates again. They tell you to *"go ahead and schedule it; any time is good for me."* You schedule the audit for two weeks' time.

### Gathering information

On the day of the audit, you arrive with Worker A in the production department and go directly to the supervisor's office. Supervisor B is on duty. They are surprised to see you, so you explain that you are there to begin the audit. Supervisor B tells you that the PM did not inform them about the audit. They explain that they are very busy but *"there will never be a good time, so go ahead, and we will try to fit it in around production."*

While in the office you ask Supervisor B if you and Worker A can review the necessary paperwork. They have difficulty finding some items, but eventually locate them in a filing cabinet. Risk assessments have been completed, but are dated three years ago. You also notice that a first-aid kit is kept on top of the filing cabinet.

You then ask Supervisor B to show you the production area. On the way, you pass a notice board that displays a 'no eating or drinking in the production department' sign, and a copy of the organisation's health and safety policy. The policy is signed by the previous managing director, and is also dated three years ago.

In the production area you find five workers, all wearing the correct personal protective equipment (PPE) - gloves, goggles, and disposable dust masks - as described in the risk assessment. There are 5 one-tonne mixers in the area. At the side of each mixer is a stairway for workers to access the funnel at the top for loading raw materials. The ingredients are mixed with a metal stirrer that is driven by a motor. The finished product is then passed through a valve at the bottom of the mixer. You can see that full, partly full, and empty drums of chemicals are piled up around the mixers and you notice spillages on the floor.

You watch one batch of the product being made by Worker C. The liquid raw materials are stored in a nearby warehouse in 25-litre drums. You see a worker using a forklift truck (FLT) to deliver full drums from the warehouse to the production area. The most direct route is to bring the drums in through the emergency exit door of the production area. However, this door is too small for the FLT to enter, so the drums are left outside of the emergency exit door until they are needed. You can see that some of the drums are currently blocking part of the doorway. You also notice a 'no authorised persons beyond this point' sign on the exterior of the door.

Worker C finds the raw materials they need outside the emergency exit door and carries the drum up the stairs to the mixer. They open the drum, and as they tip it into the funnel, you see some of the chemical splashing over the edge. They leave the empty drum in the production area and repeat the filling process with the remaining raw materials. They then turn on the mixer to blend the raw materials.

You examine the mixer and see evidence of previous spillages. There is some corrosion on the motor that drives the stirrer, and the seals look worn. A maintenance log is kept by the mixer, and you notice that routine maintenance has not been recorded for six months.

While the product is mixing, you speak to Worker C. They remove their gloves and show you that they have mild dermatitis from skin contact with the spilled chemicals and their hands get hot in the heavy gloves. They also complain that the work is tiring, and the dirty production area is unacceptable. They tell you that they have reported these issues to the PM, but nothing has been done.

A sample of the product is then tested in the quality control laboratory, which takes 30 minutes. Once approved, the finished product is poured into clean 25-litre drums, labelled, and driven back to the warehouse using an FLT.

You discuss the chemical storage and handling with Supervisor B, and they agree that it is a problem. In addition to the health and safety issues of spilt chemicals, they tell you that some of the ingredients are very expensive and there is a high level of waste. Supervisor B also tells you about issues with moving the chemicals. They explain that one worker is currently off work because they injured their back from carrying the 25-litre drums. They add that, on another occasion last month, a worker slipped on spilt chemicals and fell down the mixer stairs. This worker was injured from the fall and had three weeks off work to recover. You check in the accident book and confirm that this accident was correctly recorded, but that no investigation took place, and it has not been reported to the Regulator. The number of accidents and near misses recorded in the production department is high.

### **Audit analysis and report**

You discuss information gathered during the audit with Worker A. According to the organisation's audit procedure, the findings are classified as: Good Practice (GP), Opportunities for Improvement (OFI) and Non-Compliance (NC). You decide to raise three findings:

- GP: correct use of PPE;
- OFI: document retention and accessibility;
- NC: chemical storage and handling.

You use the standard template from the organisation's audit procedure to write the audit report. You raise an action to improve chemical storage and handling, and make the PM responsible, with a timescale of two months. You then email the audit report to the senior management team. The PM telephones you to thank you for the audit report, and for highlighting the chemical storage and handling issues.

## **The project**

The PM tells you that they are under pressure to increase production capacity. Last month they attended a trade fair and were interested in information on systems enabling the bulk movement and storage of raw materials. There are only three raw materials used in large volumes at the organisation. Instead of the 25-litre drums, the raw materials could be delivered by tanker and stored in dedicated bulk storage tanks, then pumped directly to the mixers as needed. This would remove the need for manual handling of raw materials, speed up production, and increase production capacity.

You tell the PM that there will be health and safety issues resulting from this change. You both agree that, if approved, you will need to be part of the change management process for this project. To convince the senior management team that this change is needed, you write a proposal setting out the financial arguments for improving health and safety.

Your proposal is successful, and the resources required for the project have been provided. The PM starts a change management process to implement the bulk delivery, storage, and transfer of raw materials.

## **One year later**

The project is complete. The three raw materials are now delivered by tanker and pumped into new storage tanks. Pipework has been installed between the storage tanks and the existing mixers. The time it takes to produce one batch of product has reduced from two hours to one hour.

You review the impact of the change on health and safety performance. The accident book shows that the number of accidents and near misses recorded in the production department has greatly decreased. You visit the production area and find that the level of housekeeping has improved. Supervisor B says that production volume has increased. Additionally, the reduction in manual work means that it is less tiring for the workers, and they are generally happy with these changes. They can plan production more easily, and no longer need to use temporary workers for rush orders.

At the monthly management meeting, where health and safety is always reviewed, the senior management team are happy with progress. The targets for a reduction in incidents and accidents, and increased production capacity, that were set last year, have been achieved.

### Task 1: Audit approach

- 1 (a) What was *positive* about the approach taken to the audit of the production department? (12)  
*Note: Your answer must be based on the scenario only.*
- (b) Why is it important to review findings from audits? (7)

### Task 2: Change management controls

- 2 What changes could have occurred during the project that may require management of change controls? (10)  
*Note: You should support your answer, where applicable, using relevant information from the scenario.*

### Task 3: Training to develop competence

- 3 What training would you recommend to develop worker competence in the production department following the project? (11)  
*Note: You should support your answer, where applicable, using relevant information from the scenario.*

### Task 4: Procedural controls

- 4 What *procedural* controls could be in place to reduce the likelihood of an incident when handling chemicals on site? (8)  
*Note: You should support your answer, where applicable, using relevant information from the scenario.*

### Task 5: Financial arguments to improve health and safety

- 5 Your proposal to senior management convinced them to provide resources for improving health and safety in the production area.  
What *financial* arguments could have been used in this proposal? (15)  
*Note: You should support your answer, where applicable, using relevant information from the scenario.*

## Task 6: Obligations of employers to workers

- 6 Employers have obligations under Recommendation 10 (a, b, c, d, e and g) of the International Labour Organisation's (ILO's) R164 – Occupational Safety and Health Recommendation, 1981 (No. 164).

Comment on how these *employer* obligations may **not** have been followed at the time of the audit of the production department. (15)

**Note:** You should support your answer, where applicable, using relevant information from the scenario.

## Task 7: Indicators of health and safety culture

- 7 Comment on the indicators of a *negative* health and safety culture within the organisation at the time of the audit. (12)

**Note:** You should support your answer, where applicable, using relevant information from the scenario.

## Task 8: Good practice within a health and safety management system

- 8 How has the organisation demonstrated good practice within a health and safety management system? (10)

**Note:** You should support your answer, where applicable, using relevant information from the scenario.

## End of examination

Now follow the instructions on submitting your answers.

## Important note

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