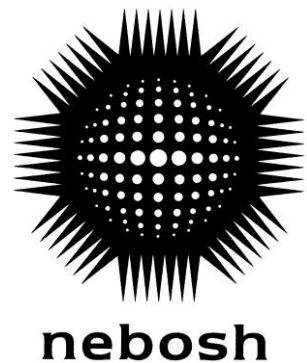


UNIT EMC1:

For: NEBOSH Environmental Management Certificate



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 realistic 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.

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 available answer template.

Please attempt **ALL** tasks.

SCENARIO

A hotel has recently been acquired by a global hospitality corporation. The CEO of the corporation has kept the existing workers in place, including a hotel manager, ten seasonal workers (who change frequently throughout each tourist season), and two permanently employed hotel maintenance workers.

The CEO has appointed you as an environmental advisor to review current environmental management in the hotel, and make recommendations for implementing a formal environmental management system (EMS). The CEO has advised the hotel manager to continue running the business as usual and, if there are any issues, to email them directly; otherwise they will not be able to visit the hotel site and introduce themselves in person for at least six months.

The hotel is a two-storey building surrounded on all sides by high-rise multistorey office block buildings. The hotel is located on a main commuter road in a busy city centre. The country's climate has extreme seasons: hot summers and stormy winters with lots of wind and rain.

An outdoor, heated swimming pool is provided for hotel guests and is located at the back of the hotel building. The swimming pool is set into the ground and lined with concrete which is starting to crack due to its age. The swimming pool is available for use 16 hours a day, 7 days a week; a Tannoy system is used to announce when the pool is about to open and close.

The hotel's main customer demographic is people aged 18-25 years old; the hotel is popular with party groups as it is located near to bars and nightclubs. There is also a drinks' bar in the pool area that is open in the evening and plays music for guests.

The seasonal workers are responsible for supervising and maintaining the pool area. The swimming pool is chemically treated three times a day to clean the water and prevent algae build-up. An electric-powered heating system automatically starts heating the water when the pool temperature is too cold, then stops when it reaches temperature. High-powered electric water pumps continually filter and recirculate fresh, clean water into the swimming pool, and re-fill it as required to keep the water levels topped up. The pumps and heating system are serviced infrequently as it is too expensive for the hotel to appoint an external contractor to service them regularly, and the hotel's workers are not trained on how to do this.

When the pool is closed to guests at night, the water pumps and heating systems are turned off, and a tarpaulin cover is placed on top of the swimming pool. Energy-efficient lighting keeps the pool area illuminated during hours of darkness in the event of any emergency evacuations from the hotel. The workers' induction training includes energy saving measures; workers are told that they must always remember to check that everything is turned off before the pool area closes at night.

The swimming pool's cleaning chemical liquids, which contain chlorine, are kept in a small plant room two-metres away from the swimming pool. The liquids are stored in 10-litre storage containers and are delivered to the hotel on a weekly basis. The delivery workers walk through the pool area and place the chemical containers directly into the plant room. They are delivered as soon as the swimming pool opens, when there are generally the lowest number of guests in the vicinity.

The hotel manager's primary concern is the running costs of the swimming pool, that are mostly due to energy bills from the electrical equipment. The manager wants to start monitoring energy consumption levels to determine which aspects of the swimming pool are costing the most money. You consider all the environmental aspects of the swimming pool and identify several areas where environmental performance could be improved, as well as reducing energy use.

You ask to see the hotel's emergency response plan, as you are concerned about the environmental impact in the event of a chemical spillage. Two seasonal workers who are on shift at the time advise that they are not aware of an emergency response plan. The workers do not know who they would

contact in the event of a spillage, and admit that there have been previous incidents where cleaning chemical containers have been accidentally dropped, but fortunately they did not spill.

You ask if these incidents have been reported, but the workers advise they are unsure who to report environmental incidents to. The responsibility had previously been allocated to a seasonal worker, but they have since left the hotel and the responsibility has not been passed on. Due to the short-term nature of their contracts the seasonal workers did not want to cause trouble by raising this with the hotel manager.

One of the recommendations in your report is to use a more modern, UV pool cleaning system, as this would require no cleaning chemicals and would reduce energy consumption in recirculating the water. You discuss this with the hotel manager, who advises that they would like to look into other ways of reducing energy costs for their existing system first, such as using renewable energy sources to power the pumps and heating system.

You also suggest setting up regular meetings with nominated workers to consult and brief them on plans to improve environmental management. However, the manager is not keen on this suggestion, as they are currently in their busiest holiday period and the workers do not have time to attend any meetings.

Task 1: Emergency preparedness and response

- 1 You find that there is no emergency procedure for workers to follow in the event of a cleaning chemical spillage.
- (a) What actions would you recommend as part of the emergency procedures for chemical spillages around the swimming pool area? (8)
- (b) What documents should be made available to workers in the event of a chemical spillage? (3)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

Task 2: Renewable sources of energy

- 2 The hotel management is considering replacing the pool's heating system with a solar-powered photovoltaic (PV) panel heating system.
- What are the advantages and disadvantages of utilising a solar-powered PV panel system for the swimming pool? (12)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

Task 3: Energy efficiency

- 3 (a) Based on the scenario only, what *positive* steps has the hotel management taken to increase energy efficiency of the swimming pool and surrounding pool area? (3)
- (b) Based on the scenario only, what further actions could be taken by the hotel management to increase energy efficiency of the swimming pool? (10)

Task 4: Leadership and commitment

- 4 Based on the scenario only, to what extent does the hotel management demonstrate commitment to environmental management? (12)

Task 5: Environment management responsibilities

- 5 How could the hotel management improve the seasonal workers' awareness of their environmental management responsibilities? (8)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

Task 6: Environmental noise: sources and control methods

- 6 During your review of the hotel, you find that neighbours have complained about noise from the hotel's swimming pool area.
- (a) What could be contributing to the hotel's noise impact? (8)
- (b) What controls could be put in place to reduce the noise impact? (6)

End of examination

Now follow the instructions on submitting your answers.

Note: This Learning Partner sample is shorter than the actual examination paper but gives a flavour of what it will be like. It incorporates typical examples of tasks and questions that may form the examination.