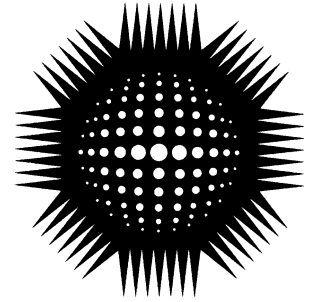


NEBOSH

FIRE SAFETY

UNIT FSC1:

For: NEBOSH Certificate in Fire Safety



nebosh

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

You are the new owner of an established petrol/gasoline filling station in a small village. You have no previous experience of this type of business. The petrol/gasoline filling station also contains a small convenience store. This convenience store is the only store in the village. The store stocks a limited range of prepared and ready-to-eat foods, alcoholic and non-alcoholic beverages, household goods, tobacco products, and newspapers and magazines. The village is on the outskirts of a popular coastal town that attracts large numbers of visitors, so the petrol/gasoline filling station is often busy with both locals and tourists.

The small store is divided into two parallel shopping aisles by a central shelving unit. The shelves are packed full of general goods, such as food, cleaning supplies and other household products. At the back of the store, at the end of the aisles, there are two large refrigerators for chilled items. Customers pay for their purchases at the front of the store, close to the entrance. Payments are taken by a cashier who, for security reasons, works in a secure area, separated from customers by a transparent plastic screen. The secure area can only be entered via a door fitted with a security keypad. In between the two large refrigerators there is a fire-resisting door that leads to a small stock room. This door does not fully close against the door frame and there are large gaps between the bottom of the door and the floor. The door is often wedged open by workers bringing in stock to refill the shelves and the refrigerators. The door is fitted with a glass vision panel, but this is cracked. Over the years the door has been painted several times and some of the paint is now cracking and peeling off. The stock room is small and very congested; there are boxes and pallets full of stock, as well as empty packaging that is ready for waste collection. At the back of the stock room there is an emergency exit door, this is not always accessible due to the congestion in the stock room. The other emergency exits are the main entrance/exit door from the store and an additional emergency door within the secure cashier area. There is no emergency lighting fitted within the store. An automatic fire detection and alarm system is fitted inside the store area. The detection system activates sprinklers and alerts a monitoring centre who then inform the local fire department when required. As far as you are aware, this system has a maintenance and testing contract with a local organisation. In addition, there are water and CO₂ extinguishers inside the store. There is one fire alarm call point inside the secure cashier area. There are no fire information notices or signage displayed in the store.

Immediately outside the store entrance there is a newspaper stand, and some large plastic drums that hold disposable barbeques, coal, and wood logs. All these items are moved inside the store entrance outside normal hours of business.

There are four self-service petrol/gasoline pumps on the forecourt. At any one time there is room for four vehicles to refuel at the same time. The emergency fuel shut-off switch is located on the outside of the store building. The forecourt has signs warning customers of the dangers of petrol/gasoline, not to smoke, not to use mobile phones and to switch off their vehicle's engine. In addition, sand and dry powder extinguishers are located next to the pumps.

On the same site as your petrol/gasoline filling station, but not owned by you, is a caravanning and camping supplies shop. The two businesses are separated by a 5ft (1.5 metre) high brick boundary wall. The caravanning and camping supplies shop offers a gas cylinder exchange service for its customers. Varying size cylinders of propane and butane gas are stored in two single-storey, steel cages, a short distance from the shop. The cages are left unlocked so that customers can place their empty cylinders in the cage and take a replacement. One enclosure is used for empty cylinders and one for full cylinders. The cages are at the side of the caravanning and camping shop on a paved area away from the petrol/gasoline filling station. The area around the cages is overgrown and littered with rubbish. The distributor of the gas cylinders collects the empty cylinders only once every two weeks. At busy periods there are often empty cylinders that do not fit into the caged area. The owners of the caravanning and camping shop have recently won a contract with a local holiday park and they now supply and exchange all the holiday park's gas bottles. Once a week, workers from the holiday park drop off the park's empty gas bottles and take away new full ones. This contract means that the storage cage for the empty gas cylinders is regularly full and the gas cylinders are being stacked on top of each other outside the cages. There is no signage on the cages or in the

surrounding areas to say what is contained in the cylinders, or the dangers of their contents. Since you have taken over the petrol/gasoline filling station you have noticed a few workers from the caravanning and camping shop regularly taking cigarette breaks at the side of the building next to the gas cylinders and storage cages.

There is a basic CCTV security system that covers both businesses, however there are areas that the cameras cannot see. The security system is maintained once a year and the cost shared by the two businesses.

You have recruited three new workers and a manager to help you run the busy petrol/gasoline filling station. You want two people working at any one time during the working day. One worker will be behind the cashier desk authorising self-service petrol/gasoline pumps to dispense fuel and taking payments for petrol/gasoline and goods. The other worker will be restocking shelves, taking deliveries, and helping customers where needed. The manager will oversee the day-to-day running of the business on your behalf. As each new worker joins, the new manager takes them on a tour of the premises, explaining their main job responsibilities and actions to take in emergencies. They show the new workers where the fire extinguishers are located. However, the new manager cannot explain how to use the extinguishers or what category of fire they should be used for, as they are yet to receive training on them. They assure the new workers that they will review the company health and safety handbook and then let them have the relevant information. The new manager explains to the new workers that they are also new to the business, so will be learning all the different aspects of running a busy petrol/gasoline filling station and convenience store alongside them.

During an evening shift, customers report that there is a large group of local youths gathering, smoking and drinking at the side of the store building (this is in the area between the caravan and camping supplies shop and the petrol/gasoline filling station). The manager looks at the CCTV to see what they are doing but realises that this is one of the areas that the cameras do not cover. They go outside to speak to the group of youths and ask them to move away from the petrol/gasoline filling station. As they are leaving, several of the group threaten to come back when the petrol/gasoline filling station is closed to damage the property. The manager calls you to let you know what has happened and you inform the local police station of this threat. You ask your manager to make sure everything is securely locked up at the end of their shift.

The same night, the alarm monitoring centre call the fire department due to a fire alarm activation. The fire department is on its way to the premises and you are to meet them there. When you arrive at the premises the fire department have already done a sweep of the outside areas and ask you to unlock the building so they can investigate further. On further investigation they conclude this is a false alarm. The fire inspector informs you that the local fire department and local authority is starting a new initiative. This will concentrate on those businesses that have multiple false alarms. These businesses could face further action and fines if they do not improve their call out record.

Task 1: Safety of people in the event of fire

- 1 Based on the scenario only, what additional control measures could help evacuation of workers and customers in the event of a fire? (20)

Task 2: Appropriate training requirements

- 2 Comment on what additional fire safety information the petrol/gasoline filling station manager should have provided to the new workers. (12)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

Task 3: Fire protection of buildings

- 3 (a) Based on the scenario only, what types of fire extinguishers are provided at the petrol/gasoline filling station and in the store? (3)
- (b) Comment on the suitability of the fire extinguishers you have identified from the scenario. (8)
- (c) What are the limitations of each fire extinguisher that you have identified from the scenario? (4)
- 4 What improvements could be made to the site to reduce the risk of arson? (4)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

Task 4: Appropriate control measures to minimise fire and explosion risks

- 5 (a) What are the positive features of the gas cylinder storage area explained in the scenario? (2)
- (b) What fire safety improvements could be made to the gas cylinder storage area? (10)

Task 5: Moral and financial reasons for managing fire safety

- 6 What would be the implications of high numbers of false alarms? (4)

Task 6: Means of escape

- 7 Comment on why the fire-resisting door into the stock room may fail to provide sufficient protection in the event of a fire.

(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.

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.

SAMPLE