



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024**

- COURSE NAME : GENERAL WORKPLACE SAFETY
- COURSE CODE : BDG 20902
- PROGRAMME CODE : BDG
- EXAMINATION DATE : JULY 2024
- DURATION : 2 HOURS 30 MINUTES
- INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 - Open book
 - Closed book
 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

Q1 “A hazardous substance is any materials that, due to its chemical, physical, or biological nature, has the potential to cause harm to people, animals, or the environment. This harm can range from irritation or allergic reactions to more severe effects such as burns, poisoning, or even death. Hazardous substances include chemicals, gases, liquids, solids, dusts, mists, fumes and biological agents”. Based on the provided information, please answer the following questions.

- (a) What are the potential health hazards associated with exposure to asbestos? Provide list of examples of respiratory conditions caused by asbestos exposure. (3 marks)
- (b) Explain the differences between dusts, mists, smoke, and fumes. Provide examples of sources for each type. (4 marks)
- (c) Develop a checklist for conducting a risk assessment of hydrogen sulphide exposure in the workplace. Include factors such as exposure levels, potential health effects, and control measures. (6 marks)
- (d) Evaluate the effectiveness of current control measures for minimizing exposure to dusts, mists, smoke, and fumes in the workplace. (6 marks)
- (e) Assess the potential environment impact of using man-made mineral fibres in construction materials. (6 marks)

Q2 Working with plant and equipment generally involves operating, maintaining, and using machinery, tools and devices in various industrial, construction, or manufacturing settings. The **Figure Q2.1** illustrates an example of portable tools and hand tools being utilized.



Figure Q2.1 Portable Tools and Hand Tools

- (a) Define the term “abrasive wheels” and provide **TWO (2)** examples of industries where abrasive wheels are commonly used.
(3 marks)
- (b) Explain the difference between electric, hydraulic, and pneumatic-powered portable tools. Provide examples of each type of tool and their typical applications.
(6 marks)
- (c) Outline the steps to safely operated a powered wood lathe machine. Include considerations such as material selection, tool setup, and personal protective equipment (PPE) required.
(5 marks)
- (d) Investigate the impact of ergonomic design features on the use of portable tools in a manufacturing environment. Discuss how ergonomic design can improve operator comfort, productivity and safety.
(6 marks)
- (e) Construct a checklist for inspecting hand tools in a workshop. Include **FIVE (5)** key areas to inspect and criteria for determining if the tool is a safe for use.
(5 marks)
- Q3** “Working with services and consumables generally involves the used and management of utilities, fuels, and other essential resources in various operational contexts. This can encompass electricity, compressed air, steam, and consumables such as fuel and gas”. Based on the provided information, please answer the following questions.
- (a) Define the term “compressed air” and list **TWO (2)** common applications of compressed air in industrial settings.
(3 marks)
- (b) What is the primary purpose of using steam in industrial process? Write **TWO (2)** examples of industries where steam is commonly used.
(4 marks)
- (c) Describe the properties of Liquefied Petroleum Gas (LPG) and its storage requirements to ensure safety in the workplace.
(4 marks)
- (d) Analyse the potential risks and benefits of using steam boilers for the heating in industrial processes. Discuss strategies to minimize the risks associated with steam boiler operation.
(7 marks)

- (e) Explain the potential hazards associated with working with electricity in the workplace. Provide specific examples of control measures and engineering controls to effectively mitigate these hazards.

(7 marks)

Q4 The workplace, in general, encompasses various aspects of the environment where employees carry out their duties. It includes physical space, organizational culture, safety practices, and overall atmosphere. In a typical workplace, there are various hazards, includes space constraints, poor lighting, heat stress, cold stress, noise and vibration, as illustrated in **Figure Q4.1**.

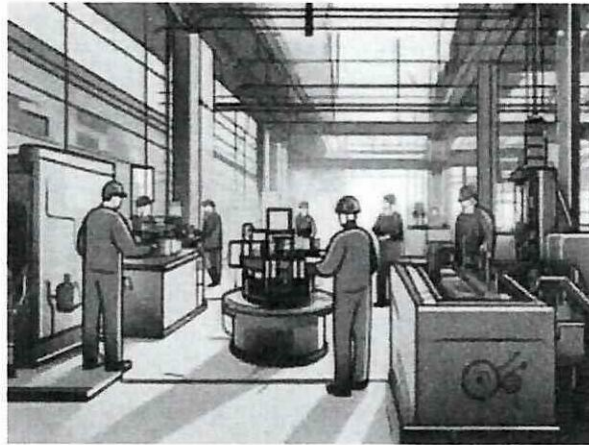


Figure Q4.1 The Workplace

- (a) List the characteristic of confined spaces and identify examples of confined spaces in various industries.
(3 marks)
- (b) Explain the risks associated with working at heights and propose the appropriate control measures to mitigate them.
(4 marks)
- (c) Demonstrate correct ergonomic techniques for tasks such as computer use, lifting and sitting to reduce the risk of injuries.
(6 marks)
- (d) Evaluate the effectiveness of personal protective equipment (PPE) selection and use in minimizing exposure to hazardous substance in the laboratory.
(4 marks)
- (e) Explain the importance of machine guarding and safety devices in preventing accidents and injuries in workshops.
(4 marks)

- (f) Evaluate the effectiveness of safety training programs for workshop personnel in promoting a culture of safety and reducing the incidence of workplace accidents.

(4 marks)

- END OF QUESTIONS -