



UNIVERSITI KUALA LUMPUR
INSTITUTE OF MEDICAL SCIENCE TECHNOLOGY

FINAL EXAMINATION
MARCH 2025 SEMESTER

COURSE CODE : HGD10503
COURSE TITLE : INTRODUCTION TO OCCUPATIONAL SAFETY & HEALTH
PROGRAMME NAME : DIPLOMA IN ENVIRONMENTAL HEALTH
DATE : 23 JUNE 2025
TIME : 2:00PM - 5:00PM
DURATION : 3 HOURS



INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consist of TWO sections.
4. Section A consist 25 MCQ or EMQ questions. Answer ALL questions.
5. Section B consist of four questions. Answer THREE (3) questions only.
6. Please write your answer on the answer booklet provided.
7. Please answer all questions in English only.
8. Please answer MCQ/EMQ questions using OMR sheet. *Tick if applicable*
9. Refer to the attached Formula/ Appendies. *Tick if applicable*

SECTION A (Total: 25 marks)

Answer ALL questions.

Please use the objective answer sheet provided.

1. A construction crew is working outdoors in a region experiencing a heat wave with high humidity. What should the safety supervisor do to ensure to ensure safety and productivity of the worker?
 - A. They should ignore the heat wave and maintain the regular work schedule.
 - B. They should tell workers to wear as many layers of clothing as possible to protect them from the sun.
 - C. They should provide workers with unlimited cold water and encourage them to drink as much as possible.
 - D. They should implement a work-rest schedule, provide shaded rest areas, encourage frequent hydration, and monitor workers for signs of heat stress.

2. How does prolonged exposure to vibration cause Hand-Arm Vibration Syndrome (HAVS)?
 - A. Vibration causes a buildup of lactic acid in the hand muscles, leading to chronic inflammation and nerve damage.
 - B. Vibration stimulates excessive bone growth in the hands, compressing nerves and causing pain and numbness.
 - C. Vibration causes a breakdown of synovial fluid in the joints, leading to increased friction and tissue damage.
 - D. Vibration damages blood vessels, nerves, and muscles in the hands and arms, leading to HAVS.

3. The provisions of OSHA 1994 apply to all categories of workplaces except _____.
- A. public sector administrative offices.
 - B. commercial retail establishments.
 - C. schools and educational institutions.
 - D. private residences employing domestic staff.
4. What is the concept of "ALARA" in the context of radiation safety?
- A. Minimizing radiation exposure to levels as low as reasonably achievable.
 - B. Ignoring radiation safety measures to save time and money.
 - C. Implementing radiation safety measures only when legally required.
 - D. Maximizing radiation exposure to achieve faster results.
5. Which of the following are examples of ionizing radiation?
- I. X-rays
 - II. Ultraviolet (UV) light
 - III. Gamma rays
 - IV. Alpha particles
- A. I and II.
 - B. I and IV.
 - C. II and III.
 - D. III and IV.

6. How does the personal protective equipment (PPE) shown in the figure help mitigate cold stress for the worker?

Refer Below - Figure1 : Personal protective equipment .



Figure 1: Personal protective equipment

- A. The multiple layers protect from rain, and the gloves protect from sharp objects.
 - B. The multiple layers prevent heat loss from the core, and the gloves prevent heat loss from the extremities.
 - C. The multiple layers and gloves increase the worker's body temperature and cause sweating.
 - D. The multiple layers are only for visibility, and the gloves are for gripping tools.
7. Which of the following heat-related illnesses represents the most severe and life-threatening condition?
- A. Heat stroke.
 - B. Heat cramps.
 - C. Heat exhaustion.
 - D. Heat rash.

8. A construction company is using heavy jackhammers in a residential area, causing significant noise complaints from residents. What is the best strategy to effectively mitigate the noise impact and maintain positive community relations?
- A. Implement targeted noise control strategies, such as erecting temporary noise barriers and scheduling the loudest tasks during mid-day hours.
 - B. Provide all workers and residents with earplugs to protect them from the noise.
 - C. The residents need to be temporarily relocate until the construction is completed, as the noise levels are unavoidable with the equipment being used.
 - D. Continue working with the current equipment and schedule, informing residents that the noise is a necessary part of construction progress.
9. What type of personal protective equipment (PPE) is shown in the figure below, and what is its purpose?

Refer Below - Figure2 : Personal protective equipment .



Figure 2: Personal protective equipment

- A. Earplugs, to reduce noise exposure.
- B. Gloves, to protect the hands.
- C. Safety glasses, to protect the eyes.
- D. Earmuffs, to reduce noise exposure.

10. A team of environmental health officers is conducting fieldwork in a remote area known for a high prevalence of vector-borne diseases. Which of the following actions should they take to minimize their risk of infection?
- I. Rely on local residents' advice for protection.
 - II. Use insect repellent only when they see mosquitoes.
 - III. Conduct a pre-trip risk assessment.
 - IV. Follow established safety protocols during fieldwork.
- A. I and III
 - B. II and IV
 - C. II and III
 - D. III and IV
11. Which of the following is a source of biological hazards in a waste management facility?
- A. Cardboard boxes.
 - B. Construction debris.
 - C. Recycled plastics.
 - D. Medical waste.
12. What is the significance of signal words on chemical labels?
- A. They describe the general preventative, response, storage or disposal precautions.
 - B. They indicate the severity of the hazard associated with the chemical.
 - C. They indicate the chemical's product or chemical name.
 - D. They provide a brief summary of the chemical's properties.

13. A company is planning to introduce a new work process that involves handling nanomaterials. What should they do to ensure they comply with all safety & health legal requirements?
- A. They should delay the implementation of the new process until specific regulations are issued by DOSH.
 - B. They should rely solely on the material supplier's safety data sheet without conducting their own risk assessment.
 - C. They should proceed with the new process without any specific safety measures, as nanomaterials are not explicitly mentioned in the original act.
 - D. They should conduct a thorough hazard assessment, consult with experts, and implement comprehensive control measures, even in the absence of specific regulations.
14. Which government body in Malaysia is responsible for the administration of the Department of Occupational Safety & Health (DOSH)?
- A. Ministry of Finance
 - B. Ministry of Education
 - C. Ministry of Human Resources
 - D. Ministry of Health
15. What is the primary focus of Occupational Safety and Health?
- A. Promoting social interactions and team building among employees.
 - B. Ensuring a working environment free from hazards that may cause injury, illness, or death.
 - C. Streamlining administrative procedures within a company.
 - D. Maximizing company profits through efficient labor practices.

16. Why is it important to know the "route of exposure" when choosing personal protective equipment (PPE) for workers that handle chemicals?
- A. Knowing the route helps determine the duration of PPE usage.
 - B. Knowing the route helps determine the compatibility of the PPE material with the chemical hazard.
 - C. Knowing the route helps determine the PPE donning and doffing procedures.
 - D. Knowing the route helps determine what PPE is needed to protect specific body parts.

17. A spill occurs involving chemicals that labelled with the following signal word and pictogram. How should workers respond to this chemical spill safely?

Refer Below - Figure3 : Chemical Label .

DANGER



Figure 3: Chemical Label

- A. They should attempt to clean the spill with bare hands.
- B. They should immediately evacuate the area, use appropriate PPE, and follow the spill response procedures outlined in the SDS.
- C. They should dilute the spill with water to minimize its corrosiveness.
- D. They should ignore the spill, assuming it will evaporate.

18. What is a key reason for implementing Occupational Safety and Health measures in the workplace?
- A. To create a competitive environment among workers.
 - B. To increase production speed without regard for worker well-being.
 - C. To reduce the number of social gatherings among staff.
 - D. To minimize the risk of accidents and illnesses among employees.
19. A worker that is under pressure to complete a rush job, finds a container of clear liquid that appears to be the solvent they need. The container is unlabeled. What should be the proper course of action to ensure their safety?
- A. They should smell the liquid to confirm it is the solvent they need.
 - B. They should use the liquid assuming it is the correct solvent.
 - C. They should refuse to use the liquid.
 - D. They should ask a coworker if the liquid is safe to use.
20. A company is planning to outsource a high-risk maintenance task to a third-party contractor. How should the company ensure compliance with all safety and health legal requirements?
- A. They conduct a thorough assessment of the contractor's safety procedures, provide specific safety instructions, and monitor their compliance.
 - B. It is the contractor's sole responsible for all safety aspects of the maintenance work.
 - C. The contractor is only required to submit a basic safety checklist.
 - D. They only need to verify the contractor's insurance coverage.

21. What is the relationship between exposure time and the severity of health effects when working in extreme temperatures?
- A. Exposure time only affects comfort levels, not health outcomes.
 - B. Exposure time has no effect on the severity of health effects.
 - C. Shorter exposure times increase the risk of severe health effects.
 - D. Longer exposure times increase the risk and severity of heat or cold-related illnesses.
22. What is a common source of vibration in a construction site?
- A. Reading a blueprint.
 - B. Operating heavy machinery.
 - C. Drinking water.
 - D. Wearing a hard hat.
23. What is relationship between the intensity of noise and the potential for hearing damage?
- A. Noise intensity only affects short-term discomfort, not long-term damage.
 - B. Lower noise intensity increases the risk of hearing damage.
 - C. Higher noise intensity increases the risk and severity of hearing damage.
 - D. Noise intensity has no impact on hearing damage.
24. A team of technicians is working in a refrigerated warehouse where the temperature is consistently below freezing. What should the team leader do to ensure the workers safety?
- A. They should implement a work rotation schedule and provide insulated clothing and gloves.
 - B. They should tell workers to move around frequently to generate heat.
 - C. They should allow workers to work continuously without breaks to minimize exposure time.
 - D. They should provide workers with thin cotton gloves to maintain dexterity.

25. What does the term "so far as is practicable" mean in relation to an employer's duty to ensure workplace safety?
- A. The employers are only required to implement safety measures if they are financially beneficial.
 - B. The employers are only required to implement safety measures if they are explicitly mandated by regulations.
 - C. The employers can choose which safety standards to follow based on their personal preferences.
 - D. The employers must take all reasonably possible steps to eliminate or minimize risks, considering the severity of the hazard and the availability of effective solutions.

SECTION B (Total: 75 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

Complete the Job Safety Analysis (JSA) form below for the provided job task, filling in the "Potential Hazards" and "Recommended Control Measures" columns for each step.

Refer Below - Table 1 : Job Safety Analysis Worksheet .

(25 marks)

Table 1: Job Safety Analysis Worksheet

JOB SAFETY ANALYSIS WORKSHEET		
Job: Preparing and serving a latte at a cafe counter.		
Analysis By:	Reviewed By:	Approved By:
Date:	Date:	Date:
Sequence of Steps	Potential Incidents or Hazards	Recommended Control Measures
1. Gather coffee beans, milk, and cups and tools.		
2. Grind the coffee beans using hand grinder.		
3. Operate the espresso machine to brew the espresso.		
4. Steam and froth the milk (60-70°C).		
5. Pour the brewed espresso into cup.		
6. Pour the steamed milk over the espresso.		
7. Serve latte to customers.		
8. Clean and sanitize the espresso machine and surrounding area.		
9. Handle cash or process card payments.		

Question 2

The Occupational Safety & Health Act 1994 and Occupational Safety & Health (Amendment) Act 2022 are the primary legislation in Malaysia that governs occupational safety and health in the workplace.

- (a) Describe the general duties of employers as prescribed in Section 15 (1) and 15 (2) of the Act.

(13 marks)

- (b) Describe the general duties of employees at work as indicated in Section 24 of the Act.

(8 marks)

- (c) State the penalties for breaching Section 15 and Section 24 of the Act.

(4 marks)

Question 3

Workplace accidents can cause serious harm. Investigating these accidents helps prevent it from happening again.

- (a) Explain the main purposes of investigating accidents in the workplace.
(5 marks)
- (b) Outline the key steps involved in conducting a basic accident investigation.
(10 marks)
- (c) List the essential information that should be included in an accident report.
(5 marks)
- (d) Explain the importance of reviewing and improving safety procedures after an accident investigation.
(5 marks)

Question 4

An Emergency Response Plan (ERP) is a detailed plan that outlines the actions to be taken when an unexpected and dangerous event occurs at a workplace. This document is a set of instructions that helps everyone know what to do when something goes wrong.

- (a) Explain five objectives of implementing an Emergency Response Plan (ERP) in a workplace.
(10 marks)
- (b) Outline the key components of a comprehensive Emergency Response Plan (ERP).
(15 marks)

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END OF EXAMINATION PAPER

