



UNIVERSITI KUALA LUMPUR
KAMPUS CAWANGAN MALAYSIAN SPANISH INSTITUTE

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : SMB30102
COURSE NAME : INDUSTRIAL SAFETY AND HEALTH
PROGRAMME NAME : BACHELOR OF MECHANICAL ENGINEERING
DATE : 28 JANUARY 2026
TIME : 2:00 PM – 4:00 PM
DURATION : 2 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 is consist of ONE section.
4. Section A consist of five questions. Answer FOUR (4) questions only.
5. Please write your answer on the answer booklet provided.
6. Please answer all questions in English only.
7. Please answer MCQ/EMQ questions using OMR sheet. Tick if applicable
8. Refer to the attached Formula/ Appendies. Tick if applicable

THERE ARE 6 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 100 marks)

INSTRUCTION: Answer FOUR (4) questions.

Please use the answer booklet provided.

Question 1

- (a) The Occupational Safety and Health Act 1994, (Act 514) was gazette on February 24, 1994. Among others, the legislation requires all employers with more than five employees to formulate a written Occupational Safety and Health Policy at their workplace.
- i. Explain four (4) aims of the Occupational Safety and Health Act 1994.
(8 marks)
 - ii. Describe the objective of the Occupational Safety and Health Policy.
(2 marks)
- (b) In 1952, Japan had an industrial injury and illness rate 5 times than the United States. Describe how did the Japanese overcome this problem.
(2 marks)
- (c) If an accident occurs at work and cause worker disabilities, explain two (2) benefits provided by the Social Security Organization (SOCSO).
(2 marks)
- (d) Explain how the Health & Safety at Work Act establishes the responsibilities of employers and employees in maintaining workplace safety. Provide an example of how these responsibilities are applied in practice.
(6 marks)

- (e) Describe how the Health & Safety Act influences organizational culture and employee behavior. Do you think compliance alone is sufficient to ensure safety?

(5 marks)

Question 2

CASE STUDY 1

Nibong Tebal. A technician was found death in a manufacturing factory. The Safety Officer of Giant Industries said, the dead body was found by an operator who just came to work at 7.30 am.

It was reported that three technicians were tasked to do maintenance work at nighttime to avoid disturbance of production line in the daytime. Two technicians were doing maintenance at Section C to repair a conveyor system. The dead worker named James should be at Section D to conduct preventive maintenance on a CNC lathe machine. However, he was found lying down at Section B with bloody head.

From the observation of the Safety Officer, there was nothing extraordinary found at CNC lathe machine. According to the operator who found James, there were no light turned on during he entered Section B. Normally, he was the one who turned on the light in the morning. This case had been reported to the authorized agencies and being investigated.

- (a) Case Study 1 is an example of accident happened in the industry. Discuss five (5) potential factors in the sequence of events leading to an accident as stated by H.W Heinrich in the Domino Theory.

(10 marks)

- (b) As one of the scene investigators, there are five basic accident investigation steps to be conducted before writing the investigation report. Classify the five (5) steps in the correct sequence.

(5 marks)

- (c) Discuss the categories covered under NADOPOD and evaluate why it is important to distinguish between accidents, dangerous occurrences, poisoning, and occupational diseases.

(8 marks)

- (d) Explain the purpose of NADOPOD regulations.

(2 marks)

Question 3

- (a) Discover the role of leadership in shaping an effective health and safety management system within organizations.
(4 marks)
- (b) Analyze the challenges organizations face in implementing health and safety management systems and suggest strategies to overcome them.
(6 marks)
- (c) Evaluate the importance of employee representation in the OSH Committee. How does it influence decision-making and safety outcomes?
(4 marks)
- (d) Analyze the challenges faced by OSH Committees in fulfilling their functions and suggest strategies to enhance their effectiveness.
(8 marks)
- (e) Assess the role of continual improvement in ISO 45001. Why is it essential for sustaining long-term occupational health and safety performance?
(3 marks)

Question 4

- (a) An accident happened at a power plant. An investigation team was formed to investigate the cause of the accident. Physical evidence should be recorded first as it can be rapidly changed or obliterated. Choose six (6) physical data to be recorded by the investigation team.
- (6 marks)
- (b) An accident occurred at Teratai Industries Sdn. Bhd. There were two (2) workers affected by hazardous chemicals and admitted to the hospital.
- i. Find the form needs to be submitted by the employer to DOSH?

(1 mark)
 - ii. Why is the form stated in (i) required?

(2 marks)
 - iii. When should the form be submitted?

(2 marks)
- (c) Jamal had an accident three months ago while transferring truck tire from the mould for inspection which caused him to be hospitalized and the machine broke down. He received RM16,400 from SOCSO for his hospitalization, medication and physio treatment. The claim he received does not include the whole costs. Outline four (4) other possible costs to be borne by the company.
- (4 marks)
- (d) Control is the elimination or inactivation of a hazard in a manner such that the hazard does not create a risk to workers who have to enter into an area or work on equipment in the course of scheduled work. Find five (5) types of control.
- (5 marks)
- (e) Point out the factors that contribute to the development of occupational diseases and explain how these factors vary across different industries.
- (5 marks)

Question 5

- (a) Toxic substances may act to living things including humans and animals through a number of factors. Fine four (4) of the factors.
(4 marks)
- (b) The development of preventive measures to protect against the hazard associated with industrial hygiene requires first knowing how the toxic agents enter human body. Show three (3) ways how the toxic substance enters our body and attacks the organs.
(6 marks)
- (c) A small enclosed workshop operates 18 hours per day with various operations in one area including stamping, grinding, hammering and creates high impedance of excessive noise. Analyze five (5) factors affects the risk of hearing loss of the workers.
(5 marks)
- (d) Show the difference between hypothermia and hyperthermia.
(4 marks)
- (e) Construction work below the ground level is very risky. Show three (3) precautions necessary in any type of work below ground.
(6 marks)

END OF EXAMINATION PAPER

