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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2021/2022**

COURSE NAME : OCCUPATIONAL SAFETY AND HEALTH
COURSE CODE : BDX 20902
PROGRAMME : BDX
EXAMINATION DATE : JULY 2022
DURATION : 2 HOURS
INSTRUCTION : 1. ANSWER **FOUR (4)** QUESTIONS **ONLY**
2. THIS FINAL EXAMINATION IS CONDUCTED VIA **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

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TERBUKA

- Q1** (a) The Occupational Safety and Health Act 1994 has made it mandatory for workplaces with forty or more employees to have a Safety and Health Committee. Sketch a suitable organization chart composition of minimum Safety and Health Committee for company with less than 100 employees.
(5 marks)
- (b) Mr Omar Md. Faizan had been appointed as a safety and health engineer at an aircraft manufacturing company. The first task he need to do is to strengthen the function of the safety and health committee at the work place. Illustrate a diagram of Safety and Health Committee that Mr Omar need to propose to the top management.
(14 marks)
- (c) Illustrate a suitable diagram or model to represent the **FIVE (5)** major clauses of the Environmental Management System (EMS) ISO14001:2004 standard and describe each clause.
(6 marks)
- Q2** (a) An aircraft manufacturing company which has been in operation for many years invites Mr. Muda Primula, a safety assesor for a discussion related to matters about identification of hazards at work place. The company officer explains that they use only the previous accident report as a method to identify the hazards at work place. He also stated that the previous accident report is the only best method for them. If you are the safety assesor. criticize his statement and counter propose him by giving detail explaining of **FIVE (5)** other methods which should also be used to identify hazards at work place.
(10 marks)

- (b) Extreme hazards in an aircraft manufacturing factory such as falling parts and malfunctioning equipment couple with more common risks like falling from height (as many engineers work on scaffolding or on top of aircraft) and muscular strain from difficult or unnatural postures, such as crouching in cockpits to install instruments. By using the hazards control hierarchy, illustrate a diagram showing how the aircraft manufacturing factory controlling the hazards.

(15 marks)

- Q3** (a) A recently conducted data analysis related to an aircraft component fabrication work has resulted to **TWO (2)** most critical accidents which are:

- (i) Struck by falling object
- (ii) Inhaling toxic chemical, gas or vapors

Compare both type of accidents above by giving a specific and clear example describing how each item may happen and suggest **FOUR (4)** causal factors related to each of them.

(8 marks)

- (b) The main objective in the principles of electrical safety is to protect human from electric shock, fire and burning effect resulted from contact with electricity. Using electrical safety knowledge, support the above statement by proposing **TWO (2)** fundamental steps to prevent human from contact with electricity. Provide descriptive explanation for each proposed preventive fundamental step.

(6 marks)

- (c) You are assigned as the senior safety officer at a worksite involving mechanical work in an aircraft manufacturing industry. In executing the role of the safety officer, your first priority is to initiate a safety plan for the

whole worksite. You have completed the process of identifying hazards and risk assessment for each task at the work area. The next step is to arrange for preventive and control actions to manage the risk at the worksite. Based on your safety and health work experience, evaluate **TWO (2)** type of accidents commonly happened at mechanical worksite by providing description and example of the accidents. Support your evaluation by proposing **SEVEN (7)** suitable methods for hazards preventive and control involving mechanical work.

(11 marks)

- Q4** (a) A few organizations related to occupational health for international services are the Health Safety Executive (United Kingdom), American Conference of Industrial Hygienist (United State) and International Labor Organization (ILO). Identify and provide brief description of its function for **FOUR (4)** organisations in Malaysia which are directly involved in supporting the occupational safety and health function.

(10 marks)

- (b) As an engineer in an aircraft manufacturing factory, Mr. Harry Macguire was required to conduct a special meeting with the workers to discuss about the chemical health hazards at your workplace. Based on a hazard identification study, he had decided to focus on the hazards of asbestos. Discuss the potential hazards from asbestos, the relation with health risks and how to control it. Support your discussion with suitable examples.

(15 marks)

Q5 (a) An accident has occurred at an aircraft components manufacturing plant in Shah Alam, Selangor and caused serious injury to one of the employees. As a safety and health officer, Mr. Johnny Deep had been asked by the employer to hide the mistakes of the management during the investigation. If you are Mr Johnny Deep, select your decision (whether agree or not) on employer's request and defend your decision based on the principles of accident investigation.

(8 marks)

(b) In view that there is always risk of accident happening in a work place, management must prepare to face it. This preparation before the incident include to identify who has the authority to investigate and carry out the corrective action as well as to have a system for notification and recording all incidents and injuries. List down **ELEVEN (11)** responsibilities for all persons involved in an incident investigation.

(11 marks)

(c) According to Early Theory of Accidents by Heinrich (1930's), **88%** of accident are caused by unsafe act or condition of person. Discuss why Heinrich's theory was considered weak and negative by current practice.

(6 marks)

- **END OF QUESTION** -