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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(ONLINE)
SEMESTER II
SESSION 2019/2020**

COURSE NAME : OCCUPATIONAL SAFETY AND HEALTH

COURSE CODE : BDU 21002

PROGRAMME : BDC / BDM

EXAMINATION DATE : JULY 2020

DURATION : 2 HOURS

INSTRUCTION : 1) ANSWER **FOUR (4)** QUESTIONS **ONLY**
2) THE ANSWER FORM AND THE DECLARATION FORM NEEDS TO BE SUBMITTED 15 MINUTES AFTER THE EXAMINATION PERIOD OF THIS PAPER ENDS.

THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES

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- Q1** (a) You have been appointed as a safety and health officer at a construction company. The first task you need to do is to plan about establishing a safety and health (SH) committee at the workplace. Illustrate the **FOUR (4)** designated posts and propose appointment criteria for the posts.

(10 marks)

- (b) Flyhigh Berhad is an established aerospace manufacturing company that manufacture aircraft wing. The company currently employed 100 workers including administration, engineering and general staff. Last month, AIRBOSS awarded the company to produce 5 pair of wings for their aircraft and the total lump sum project worth RM 24 million for 2 years. You are one of the new recruitment and appointed as junior safety engineer cum safety & health officer at this company. By legislation, you have needed to prepare the compliance document based on the OHSAS 18001:2007. You also represent as secretary during the safety and health meeting with the client.

- (i) Define the system requirements that based on the Plan-Do-Check-Act (PDCA) framework for the OHSAS 18001 standard.

(5 marks)

- (ii) Explain the designated clauses for developing OHSAS 18001:2007 at the workplace.

(10 marks)

- Q2** (a) Safety Culture is an organisational atmosphere where safety and health is understood to be, and is accepted as, a high priority.

- (i) List **THREE (3)** factors in the workplace that influence the safety culture.

(3 marks)

(ii) Illustrate and briefly explain main elements embedded in the safety culture.

(4 marks)

(iii) Propose THREE (3) elements that needed to be considered in the development of a safety culture.

(3 marks)

(b) In recent years, Hazard Identification, Risk Assessment and Risk Control (HIRARC) has become fundamental to the practice of planning, management and the operation of a business as a basic of risk management. Propose one example of risk assesment activity that can be done in the Aeronautical Department Lab of UTHM and evaluate the IIRARC process (support your answer using flow chart of the HIRARC process).

(5 marks)

(c) Control is the measures we take to eliminate or reduce the risk to an acceptable level. Hierarchy of Control is the order in which controls should be considered when selecting methods of controlling a risk. Justify the statements using diagram of the steps for the Hierarchy of Control based on the control effectiveness and business value.

(10 marks)

Q3 (a) “Three people were killed on Saturday when a private aircraft from a flying school crashed on a villager’s home in Bachok during training flight for student pilot. The death comprises of the student pilot, flight instructor and house owner who were sitting in his living room on which the aircraft had crashed”.

Referring to this accident, provide your evaluation and suggestion on:

(i) Potential factors that cause the accident.

(6 marks)

(ii) Strategies for hazards prevention and control.

(3 marks)

(b) Hazard is a source or a situation with a potential for harm in term of human injury or ill health health, damage to property, damage to the environment or a combination of these. Identify **EIGHT (8)** hazards based on the **Figure Q3(b)**.

(16 marks)

Q4 (a) Most informal risk assessment techniques consist of multiple steps where the worker is asked to look for hazards, determine the significance of the hazard, and take some action to mitigate the risk. Relate the following model with the informal risk assessment techniques:

(i) Stop-Look-Analyze-Manage (SLAM).

(2 marks)

(ii) Take-Two for Safety calls.

(2 marks)

(b) As an engineer in a manufacturing factory, you are required by the department's manager to conduct a hazard risk assessment at your workplace. The manager strictly asked you to use the risk analysis techniques of Failure Modes, Effects and Analysis (FMEA) and Bow Tie Analysis (BTA).

(i) Compare both techniques by clarifying their functions and major elements.

(10 marks)

(ii) Illustrate a bow tie analysis model.

(2 marks)

physical hazards and biological hazards from work activities with the objective to prevent or reduce the risks to health. Construct a summary table consisting of **THREE (3)** types of hazards with at least **THREE (3)** related examples of the hazards.

(9 marks)

- Q5** (a) Heinrich had introduced a theory of accident in 1930's
- (i) Draw a suitable diagram that represents Heinrich's early theory of accident.
- (3 marks)
- (ii) Illustrate Heinrich's five stage sequence.
- (2 marks)
- (b) Assuming there is an incident happens at your workplace as a result of poor management. Suggest **FIVE (5)** principles of the incident prevention toward improving the working environment. Support your suggestion with suitable description.
- (10 marks)
- (c) Biological agents have no threshold exposure limit. It can exist in any environment, affected and influenced by biological competition make the biological hazard very dangerous to human. Based on your evaluation, propose **FIVE (5)** safety precaution when working with biological agents.
- (10 marks)

- END OF QUESTION -

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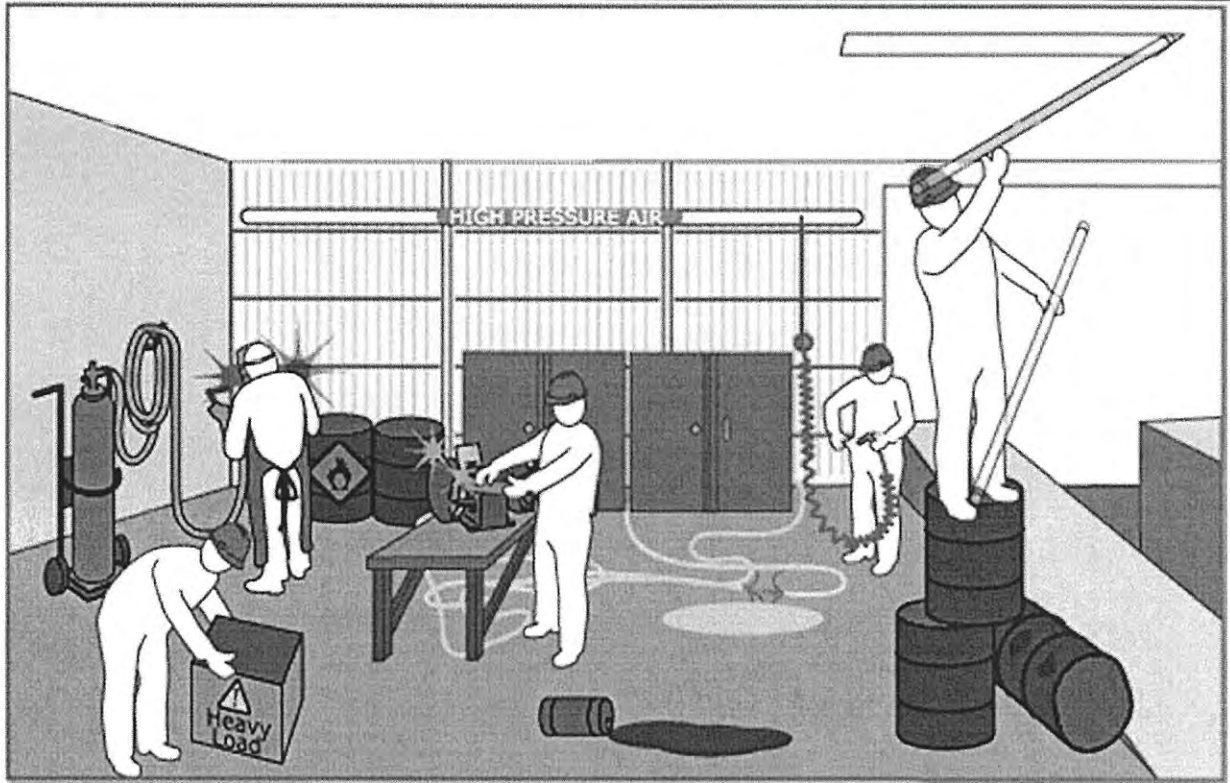


Figure Q3(b)