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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2015/2016**

COURSE NAME	:	OCCUPATIONAL SAFETY AND HEALTH
COURSE CODE	:	BDA 31302
PROGRAMME	:	3 BDD
EXAMINATION DATE	:	JUNE 2016 / JULY 2016
DURATION	:	2 HOURS
INSTRUCTION	:	PLEASE ANSWER FOUR (4) QUESTIONS FROM FIVE (5) QUESTIONS PROVIDED

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

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Q1 (a) Managing occupational safety and health (OSH) at workplaces is vital as accidents have direct and indirect costs on the organizations. Using appropriate examples, differentiate between direct costs and indirect costs.

(10 marks)

(b) As an engineer in a furniture manufacturing factory, you are required to propose **FIVE (5)** strategies to improve the work safety based on Occupational Safety and Health Act (OSHA) and Factories and Machinery Act (FMA). Support your proposal with suitable justification and examples.

(15 marks)

Q2 (a) Examine the mathematical equation below. Using appropriate example, provide detail explanation for its definition and application in the area of risk management and assessment.

$$\text{Risk} = \text{Likelihood} \times \text{Severity}$$

(10 marks)

(b) You have been appointed as the occupational safety and health officer at a large size manufacturing company. One of your top priority duty is to implement HIRARC (hazard identification, risk assessment and risk control) and you have decided to begin with the hazard identification as the first step. Select **FIVE (5)** techniques that you plan to introduce in order to obtain information related to hazard identification in the company. Support each selected technique with detail justification or example.

(15 marks)

Q3 (a) Some common factors to be considered in the area of electrical safety are isolation switches, maintenance or repair of damaged equipments, and system protection. For each of the listed factors, choose **THREE (3)** strategies or action plans that can be implemented to prevent electrical related injury.

(9 marks)

(b) Considering you are an engineer responsible for mechanical handling equipments in a heavy industry environment. Propose **SIX (6)** methods that can be practically applied to prevent and control mechanical related hazards. Provide clear justification or explanation for each proposal.

(16 marks)

- Q4** (a) Occupational health disciplines comprises of occupational medicine, industrial hygiene, occupational toxicology, ergonomics, epidemiology and industrial psychology. In practice, the prevention approaches in occupational health disciplines are separated into three sections known as Primer Prevention, Secondary Prevention and Tertiary Prevention. Differentiate these **THREE (3)** prevention approaches. Provide activity examples for each approach to support your comparison. (9 marks)
- (b) As an engineer in a manufacturing factory, you are required to conduct safety and health audit to identify health hazards at your workplace. The result of the audit activities shows that lead exposure is the major hazard. Based on the concept of risk control hierarchy, propose **FOUR (4)** methods to control the risks. Support your proposal with explanations of the effect of lead on human, legislative requirement, suitable justification for controlling methods and related examples. (16 marks)
- Q5** (a) The five stages sequence in Heinrich's theory of accident are ancestry or social environment, fault of a person, unsafe act or condition, accident and injury. Briefly explain how this theory can be applied in a mechanical workshop to prevent accident. (5 marks)
- (b) Briefly describe the term near misses and explain the importance to report and investigate all near misses. (5 marks)
- (c) As the safety officer at your place, you plan to conduct a briefing to the managements related to principle of incident investigation. You have identified two major elements to be covered during the briefing such as prove or data collection and result notification. Differentiate these two major elements and support your comparison by explaining their characteristics towards improving the working environment. (15 marks)

- END OF QUESTION -