
UNIVERSITI SAINS MALAYSIA

First Semester Examination
Academic Session 2010/2011

November 2010

EBB 398/3 - Occupational Safety and Health **[Keselamatan dan Kesihatan Pekerjaan]**

Duration : 3 hours
[Masa : 3 jam]

Please ensure that this examination paper contains NINE printed pages before you begin the examination.

[Sila pastikan bahawa kertas peperiksaan ini mengandungi SEMBILAN muka surat yang bercetak sebelum anda memulakan peperiksaan ini.]

This paper consists of SEVEN questions.

[Kertas soalan ini mengandungi TUJUH soalan.]

Instruction: Answer **FIVE** questions. If candidate answers more than five questions only the first five questions answered in the answer script would be examined.

[Arahan: Jawab **LIMA** soalan. Jika calon menjawab lebih daripada lima soalan hanya lima soalan pertama mengikut susunan dalam skrip jawapan akan diberi markah.]

The answers to all questions must start on a new page.

[Mulakan jawapan anda untuk semua soalan pada muka surat yang baru.]

You may answer a question either in Bahasa Malaysia or in English.

[Anda dibenarkan menjawab soalan sama ada dalam Bahasa Malaysia atau Bahasa Inggeris.]

In the event of any discrepancies, the English version shall be used.

[Sekiranya terdapat sebarang percanggahan pada soalan peperiksaan, versi Bahasa Inggeris hendaklah diguna pakai.]

1. [a] Differentiate between the novel characteristics of the latest '**Occupational Safety and Health Act 1994 (OSHA 1994)**' compared to the '**Factories and Machinery Act 1967**'.

*Berikan pandangan anda tentang perbezaan ciri-ciri baru dalam akta OSH terkini '**Akta Keselamatan Pekerjaan dan Kesihatan 1994**' jika dibandingkan dengan '**Akta Kilang dan Jentera 1967**'.*

(15 marks/markah)

- [b] A factory worker was injured due to falling down from the roof of the building. The cause of the accident is because the worker was resting on the edge of the building. The incident occurred after office hours. Give your opinion and your assessment on who is responsible under **OSHA 1994**.

*Seorang pekerja kilang telah tercedera kerana terjatuh dari bumbung bangunan. Sebab berlakunya kemalangan tersebut adalah kerana pekerja berehat di penjuru bangunan. Kemalangan ini berlaku selepas masa waktu pejabat. Berikan pandangan dan penilaian anda siapa yang bertanggungjawab di bawah **Akta KPK 1994**.*

(5 marks/markah)

2. As a Safety Engineer of an industrial plant or quarry; assess the importance on the following for establishment of an effective **Safety Management System** (SMS) at your worksite:
- Importance of Occupational Safety (OSH) Management System.
 - Key factors to be considered for effective Safety Management System.
 - Benefits in the implementation of a Safety Management System.

*Sebagai Jurutera Keselamatan Pekerjaan loji industri ataupun kuari; nilaikan kepentingan mewujudkan **Sistem Pengurusan Keselamatan** yang cekap di tempat kerja anda:*

- Kepentingan pelaksanaan Sistem Pengurusan Keselamatan.*
- Faktor-faktor utama yang perlu dipertimbang dalam pelaksanaan Sistem Pengurusan Keselamatan yang cekap.*
- Manfaat daripada pelaksanaan Sistem Pengurusan Keselamatan.*

(20 marks/markah)

3. [a] Determine how would you formulate the successful implementation of the '**Organisation Phase**' of the '**Virtuous Circle**' Concept for Occupational Safety and Health at your work site with respect to the following factors:

- Control
- Competency.

*Tentukan bagaimana anda hendak merangka **Fasa Pengelolaan Konsep Bulatan Cekap** (Virtuous Circle Concept) yang berjaya dalam pengurusan Keselamatan & Kesihatan Pekerjaan di tapak kerja anda berdasarkan faktor-faktor yang berikut:*

- *Pengawalan*
- *Kecekapan*

(10 marks/markah)

...4/-

- [b] Your workers in the manufacturing or processing plant have made a complaint to the top management that the their workplace is very **noisy**. Noise measurements were taken and the result obtained is 90dB. How would you assess if the workers have a valid complaint?

Pekerja kilang anda dalam bahagian pembuatan atau pemprosesan telah membuat aduan kepada pengurusan atasan yang tempat kerja mereka terlalu bising. Pengukuran hingar telah dibuat dan hasilnya ialah 90 dB. Huraikan bagaimana anda boleh menilai jika aduan pekerja adalah kukuh?

(10 marks/markah)

4. [a] Analyse, with examples, the differences between an '**Accident**' and an '**Incident**' at an industrial work site.

*Dengan bantuan contoh, terangkan tentang perbezaan di antara '**Kemalangan**' (accident) dengan '**kejadian**' (incident) di tapak kerja dalam industri?*

(10 marks/markah)

- [b] Formulate, with the help of examples, assess the differences between 'Active' and 'Reactive' Systems in **accident prevention** at a work site.

*Dengan bantuan contoh, untuk menunjukkan perbezaan di antara Sistem 'Aktif' dengan Sistem 'Bertindak Balas' dalam **pengurangan kemalangan** di tapak kerja.*

(10 marks/markah)

5. [a] List the differences between **'audits'** and **'inspections'** in occupational safety and health management.

Senaraikan perbezaan di antara sistem 'audit' dengan sistem 'pemeriksaan' dalam pengurusan keselamatan pekerjaan.

(10 marks/markah)

- [b] How would you prioritise your **daily duties as a Safety Officer** in the implementation of an efficient occupational safety and health management programme in your company?

Bagaimana anda mengutamakan tugas-tugas harian anda sebagai Pegawai Keselamatan dalam pelaksanaan pengurusan sistem keselamatan pekerjaan dan kesihatan yang cekap dalam syarikat anda.

(10 marks/markah)

6. Occupational Safety and Fire Investigation:

Company ABC (M) Bhd is a manufacturing plant. In the process of Mr. Chandran transporting toxic chemicals with a fork-lift, the chemical drums fell and the chemicals flowed out onto the factory floor. A welding maintenance job carried out nearby created a spark which initiated a fire from the spill chemicals in the factory. The whole factory was burned to the ground in 50 minutes. Mr. Fadzil, the Production Supervisor, was injured from the fire since he did not get out of the burning factory in time. Ms Siti, a factory worker, in a state of panic due to the fire injured her hand in a production equipment at her work place. Mr. Pairat, a foreign general worker, tried to offer first-aid to Ms. Siti's hand however he used the wrong medicine thus making the wound of Ms Siti's hand even worse and more painful.

Kes Penyiasatan Keselamatan Pekerjaan dan Kebakaran:

Syarikat ABC (M) Bhd ialah sebuah kilang pembuatan. Dalam proses pengangkutan kimia toksid oleh En. Chandran dengan mesin angkut susun; tong kimia terjatuh dan bahan kimia telah mengalir keluar ke atas lantai tempat kerja. Pencucuh daripada kerja kimpalan yang berdekatan tempat kemalangan telah menyebabkan berlakunya kebakaran daripada bahan kimia yang tertumpah tadi. Semua bahagian kilang telah terbakar dalam tempoh 50 minit. En. Fadzil, Penyelia Pengeluaran, telah tercedera semasa kebakaran kerana tidak sempat keluar dari kilang. Cik Siti, pekerja kilang, dalam keadaan panik telah tercedera tangannya dalam mesin di tempat kerjanya. En.Pairat, pekerja asing awam, telah cuba membantu mengubati tangan Cik Siti tetapi tersilap menggunakan ubat yang salah, oleh itu menyebabkan tangan Cik Siti menjadi lebih teruk.

Facts from Investigation:

Fakta Penyiataan:

- The fork-lift machine involved in the incident was rented from AKT Company. The mentioned fork-lift was not installed with any safety devices such as alarms. Mr Chandran is a contract worker who has just started work for only one week at AKT Company; and had not attended any safety induction courses whatsoever.

Mesin angkut susun dalam kejadian tersebut telah disewa daripada Syarikat AKT. Mesin angkut susun tersebut tidak ada peralatan keselamatan seperti penggera. En. Chandran ialah pekerja kontrak dan baru sahaja seminggu bekerja dengan Syarikat AKT dan langsung tidak mengikuti kursus keselamatan pekerjaan.

- The toxic chemicals and other types of chemicals were imported from an African country via their agent in Thailand. The chemical containers were not attached with any labelling and warning stickers.

Bahan kimia toksid dan yang lain telah di import daripada negara Afrika melalui agen di Negara Thai. Tong-tong kimia tidak ada pelekat maklumat/amaran langsung.

- Mr. Fadzil, who was hurt in the fire, did not know how to put out a fire even though he has been working in this factory for 15 years.

En. Fadzil, yang cedera dalam kebakaran tidak tahu memadamkan api walaupun telah bertugas dalam kilang ini untuk 15 tahun.

- Ms Siti is a temporary staff waiting for her SPM examination results.

Cik Siti ialah pekerja sambilan yang sedang menunggu keputusan peperiksaan SPM.

- The contract welding staff from WEL Engineering has been commissioned to carry out maintenance work by the ABC Company's Factory Manager. However no 'Permit to Work' directive for this job was ever issued by the Senior Management of ABC Company.

Pekerja kontrak kimpalan (WEL Engineering) telah diupah oleh Ketua Kilang Syarikat ABC. Walau bagaimanapun Surat Keizinan untuk kerja, 'Permit to Work', tidak dikeluarkan oleh Pengurusan Atasan Syarikat ABC.

- Mr. Pairat was never trained in First-Aid.

En. Pairat tidak pernah dilatih dalam Kursus Pertolongan Kecemasan.

- (a) From the above facts as outcome of the investigation; assess and discuss the rationale of your opinion on who is guilty, and in which instances, corresponding to the various 6 facts obtained from the point of view of the **OSHA Act and Malaysian Law**.

Daripada maklumat di atas; nilaikan dan bincangkan pandangan anda tentang siapa yang bersalah dan sebabnya daripada 6 aspek fakta penyiasatan tersebut mengikut Akta OSHA dan Undang-Undang Negara Malaysia.

(10 marks/markah)

- (b) As the company's Safety Officer, offer your opinion and recommendations on what needs to be done so that this unfortunate incident does not happen again.

Sebagai Pegawai keselamatan syarikat, bincangkan cadangan yang anda dapat berikan supaya kemalangan tersebut tidak berlaku lagi.

(10 marks/markah)

7. As a Occupational Safety & Health Officer, determine what needs to be considered in **Occupational Health/Hygiene aspects** to the following causes for the well being of the workers:

- Chemical Hazards,
- Physical Hazards,
- Heat Stress,
- Biological Hazards,
- Ergonomics Problems.

*Sebagai seorang Pegawai Keselamatan, tentukan apa yang perlu dipertimbangkan dari segi **Kesihatan Pekerja** bagi punca/masalah yang berikut untuk kesejahteraan pekerja kilang:*

- *Bahaya punca Kimia,*
- *Bahaya punca Fizikal,*
- *Bahaya punca Haba,*
- *Bahaya punca Biologi,*
- *Masalah Ergonomik.*

(20 marks/markah)