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# UNIVERSITI SAINS MALAYSIA

First Semester Examination  
Academic Session 2008/2009

November 2008

**EBB 398/3 – Occupational Safety And Health**  
**[Keselamatan Dan Kesihatan Pekerjaan]**

Duration : 3 hours  
[Masa : 3 jam]

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

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

This paper contains 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.]

Answer to any question must start on a new page.

*[Mulakan jawapan anda untuk setiap 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.]*

1. As a Safety Officer of a company discuss your views on the following for establishment of an effective **Safety Management System (SMS)**:
- (i) Importance of Occupational Safety Health (OSH) Management System,
  - (ii) Key factors to be considered for effective Safety Management System.
  - (iii) Benefits in the implementation of the OSH Training for staff.

*Sebagai Pegawai Keselamatan Pekerjaan syarikat bincangkan pandangan anda tentang pengwujudan **Sistem Pengurusan Keselamatan (Safety Management System - SMS)** yang cekap:*

- (i) *Kepentingan pelaksanaan Sistem Pengurusan Keselamatan,*
- (ii) *Faktor-faktor utama yang perlu ditimbang dalam pelaksanaan Sistem Pengurusan Keselamatan yang cekap.*
- (iii) *Manfaat daripada pelaksanaan Latihan OSH untuk pekerja.*

(20 marks/markah)

2. [a] Define the difference between an '**Accident**' and an '**Incident**' at an industrial work site.

*Beri takrifan tentang perbezaan di antara '**Kemalangan**' dan '**kejadian**' di tapak kerja dalam industri.*

(5 marks/markah)

- [b] Give your views on the safety measures that can be implemented to prevent the accidents caused by express buses based on the Bukit Gantang disastrous bus accident on August 2007.

*Bincangkan kaedah keselamatan yang dapat dilaksanakan supaya kemalangan bas ekspres dapat dielakkan pada masa depan kelak berasaskan kemalangan bas ekspres di Bukit Gantang pada Ogos 2007.*

(15 marks/markah)

3. Discuss how you can carry out the following phases for the successful implementation of the '**Virtuous Circle**' Concept in Occupational Safety and Health (OSH) Management at a work site:
- (i) Implementation of 'Active System' and 'Reactive System'.
  - (ii) Planning and Implementation.
  - (iii) Audit process for Occupational Safety and Health at site.

*Huraikan bagaimana anda dapat melaksanakan fasa-fasa berikut dengan menggunakan Konsep Bulatan Cekap (Virtuous Circle Concept) dalam pengurusan Keselamatan & Kesihatan Pekerja di tapak kerja:*

- (i) Pengurusan 'Sistem Aktif' dan 'Sistem Reaktif'
- (ii) Proses Perancangan dan Pelaksanaan
- (iii) Proses Audit untuk Keselamatan dan Kesihatan Pekerja di tapak.

(20 marks/markah)

4. [a] Classify and describe, the various types of **Hazards** with respect to OSH at any factory site.

*Kelaskan dan terangkan, tentang pelbagai jenis Bahaya dari segi pengurusan Keselamatan & Kesihatan Pekerja di tapak kerja sebuah kilang.*

(10 marks/markah)

- [b] Discuss what is '**Job Safety Analysis**' and '**Emergency Response Plan**' and your opinion how these safety schemes can be carried out efficiently at your work site.

*Huraikan pemahaman anda dalam aspek 'Penganalisan Keselamatan Tugas' dan 'Perancangan Balasan Kecemasan' dan berikan pandangan anda bagaimana skema keselamatan tersebut dapat dilaksanakan dengan cekapnya dalam tempat kerja anda.*

(10 marks/markah)

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

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

(10 marks/markah)

- [b] Discuss the process in the formulation of an audit report for a factory site.

*Huraikan proses pengwujudan laporan audit untuk sebuah kilang.*

(10 marks/markah)

6. [a] Deliberate, the types and significance, how **Efficient Worksite Practices** can be carried out at a work site for workplace safety using an example such as a factory, quarry or construction site.

*Huraikan, jenis dan kepentingannya untuk setiap fasa, bagaimana pengurusan **Sistem Kerja Cepak** (Efficient Worksite Practices) dalam aspek keselamatan pekerjaan dapat di laksanakan di sebuah tempat kerja dengan menggunakan sebagai contoh misalnya di kilang, kuari atau tapak pembinaan.*

(10 marks/markah)

- [b] Describe the **major daily duties** of a Safety Officer in the implementation of an efficient occupational safety and health management programme.

*Terangkan **tugas-tugas harian utama** Pegawai Keselamatan dalam pelaksanaan pengurusan system keselamatan pekerjaan dan kesihatan yang cekap.*

(10 marks/markah)

7. **Occupational Safety and Fire Investigation:**

Company TRK (M) Bhd is a manufacturing plant. In the process of Mr. Bala 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 spilt chemicals in the factory. The whole factory was burned to the ground in 50 minutes. Mr. Fadli, 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.

Facts from Investigation:

- 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 Bala 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.
- 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.
- Mr. Fadli, 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.
- Ms Siti is a temporary staff waiting for her SPM examination results.
- The contract welding staff from WEL Engineering has been commissioned to carry out maintenance work by the TRK Company's Factory Manager. However no 'Permit to Work' directive for this job was ever issued by the Senior Management of TRK Company.
- Mr. Pairat was never trained in First-Aid.

### ***Kes Penyiasatan Keselamatan Pekerjaan dan Kebakaran***

*Syarikat TRK (M) Bhd ialah sebuah kilang pembuatan. Dalam proses pengangkutan kimia toksik oleh En. Bala 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 kimia tertumpah tadi. Semua bahagian kilang telah terbakar habis dalam tempoh 50 minit. En. Fadli, Penyelia Keluaran, telah cedera daripada kebakaran kerana tidak sempat keluar dari kilang selepas berlakunya kebakaran. Cik Siti, Pekerja Kilang, dalam keadaan panik telah cedera tangannya dalam mesin pengeluaran kilang. En. Pairat, Pekerja Awam asing, telah cuba membantu mengubati tangan Cik Siti tetapi tersilap menggunakan ubat. Oleh itu tangan Cik Siti menjadi lebih teruk.*

#### *Fakta Penyiasatan:*

- *Mesin angkut susun dalam kejadian tersebut telah disewa daripada Syarikat AKT. Mesin angkut susun tersebut tidak ada peralatan keselamatan seperti penggera. En. Bala ialah pekerja kontrak dan baru sahaja bermula kerja dengan Syarikat AKT untuk seminggu sahaja dan tidak mengikuti langsung kursus keselamatan perkerjaan.*
- *Kimia toksik dan kimia-kimia yang lain telah diimport daripada negara Afrika melalui agennya di Negara Thai. Tong-tong kimia tidak ada pelekat maklumat/amaran langsung.*
- *En. Fadli, yang cedera, tidak tahu memadamkan api walaupun telah bertugas dalam kilang ini untuk 15 tahun.*
- *Cik Siti ialah pekerja sambilan semasa menunggu keputusan peperiksaan SPMnya.*
- *Pekerja kontrak kimpalan (WEL Engineering) telah diupah oleh Ketua Kilang Syarikat TRK. Surat Keizinan untuk kerja, 'Permit to Work', tidak dikeluarkan oleh Pengurusan Atasan Syarikat TRK.*
- *En. Pairat tidak pernah dilatih dalam Kursus Pertolongan Kecemasan.*

- [a] From the above facts as outcome of the investigation; give 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; berikan dan huraikan 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 suggestions 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)

