
UNIVERSITI SAINS MALAYSIA

First Semester Examination
Academic Session 2011/2012

January 2012

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

Duration : 3 hours
[Masa : 3 jam]

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

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

This paper consists of SEVEN questions. THREE question in PART A, TWO questions in PART B and TWO questions in PART C.

[Kertas soalan ini mengandungi TUJUH soalan. TIGA soalan di BAHAGIAN A, DUA soalan di BAHAGIAN B dan DUA soalan di BAHAGIAN C.]

Instruction: Answer **FIVE** questions. Answer **ONE** question from PART A, PART B, PART C and **TWO** questions from any sections. If candidate answers more than five questions only the first five questions answered in the answer script would be examined.

[Arahan: Jawab **LIMA** soalan. Jawab **SATU** soalan dari BAHAGIAN A, BAHAGIAN B, BAHAGIAN C dan **DUA** soalan dari mana-mana bahagian. 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.]

...2/-

PART A / BAHAGIAN A

1. [a] (i) National Institute of Occupational Safety and Health (NIOSH) was launched in 1992 after careful preparation and commitment from all parties concerned. List **THREE (3)** reasons why this institute was established.

*Institut Kebangsaan Keselamatan dan Kesihatan Pekerja (NIOSH) dilancarkan pada 1992 selepas persediaan dan komitmen yang rapi daripada pihak-pihak yang terlibat. Nyatakan **TIGA (3)** tujuan institut ini diwujudkan.*

(25 marks/markah)

- (ii) Discuss the importance and criteria for effective safety training of employee in relation to safety and health at work under Section 15 of the Occupational Safety and Health Act 1994.

Bincangkan kepentingan dan kriteria untuk latihan keselamatan yang efektif bagi pekerja merujuk kepada keselamatan dan kesihatan tempat kerja di bawah Seksyen 15 Akta Keselamatan dan Kesihatan 1994.

(25 marks/markah)

- [b] “Workplace stress involves the emotional state resulting from a perceived difference between the level of occupational demand and a person’s ability to cope with this demand.”

“Tekanan tempat kerja melibatkan keadaan beremosi akibat menerima perbezaan antara tahap permintaan pekerjaan dan keupayaan seseorang memenuhi permintaan itu.”

- (i) Comment on the above statement in relation to the sources of workplace stress.

Ulas kenyataan di atas dengan merujuk kepada sumber-sumber tekanan tempat kerja.

(25 marks/markah)

- (ii) Do you agree with the statement that by reducing workplace stress, the organisation can improve safety? Explain your view.

Adakah anda bersetuju dengan kenyataan penurunan tekanan tempat kerja, pihak organisasi boleh memperbaiki keselamatan? Jelaskan pandangan anda.

(25 marks/markah)

2. [a] (i) An employer has a legal duty to ensure the safety, health and welfare of his employees at the workplace. Describe the duty of the employer under the Occupational Health and Safety Act 1994.

Seseorang majikan mempunyai tanggungjawab dari segi undang-undang bagi memastikan keselamatan, kesihatan dan kebajikan para pekerja di tempat kerja. Terangkan tanggungjawab majikan di bawah Akta Keselamatan dan Kesihatan Pekerjaan 1994.

(25 marks/markah)

- (ii) The appointment of a Safety and Health Officer in the workplace is an obligation of the employer in certain class or description of industries (as prescribed under Section 29 of the Occupational Safety and Health Act 1994). Discuss any **FIVE (5)** duties of a Safety and Health Officer.

Pelantikan Pengawai Keselamatan dan Kesihatan di tempat kerja adalah suatu kewajipan majikan dalam pengelasan atau pindaan tertentu industri (seperti yang ditetapkan di bawah Seksyen 29 Akta Keselamatan dan Kesihatan 1994). Bincang mana-mana LIMA (5) tugas Pengawai Keselamatan dan Kesihatan.

(25 marks/markah)

[b] A company based in Penang which assembled PCB based has been operating for the past 7 years with 1000 employees. In 2010, two accidents occurred:

- 1st accident : One employee had the front portion of the her finger (right hand) severed during a mechanical assembly process.
- 2nd accident : Another employee accidentally stucked his hand in a conveyor belt during a maintenance process.

The cases were not reported to DOSH and no claim was done under PERKESO. It appears that the company does not have a safe working environment or a safety policy in their workplace.

Sebuah syarikat bertempat di Pulau Pinang yang memasang peralatan PCB telah menjalankan operasi sejak 7 tahun dengan 1000 pekerja. Pada 2010, dua kemalangan telah berlaku:

- *Kemalangan pertama : Seorang pekerja mengalami kecederaan parah di bahagian hadapan jari (tangan kanan) semasa proses pemasangan mekanikal.*
- *Kemalangan kedua : Seorang pekerja yang lain dengan tidak sengaja tersepit tangan pada tali alat pengangkut semasa proses penyelenggaraan.*

Kes tersebut tidak dilaporkan pada pihak DOSH dan tiada pampasan dimohon di bawah PERKESO. Ini menunjukkan syarikat ini tidak mempunyai persekitaran kerja yang selamat dan polisi keselamatan di tempat kerja.

- (i) Describe the roles and responsibilities of the employer and employees in order to ensure the safety and healthy workplace.

Huraikan peranan dan tanggungjawab majikan dan pekerja dalam memastikan keselamatan dan tempat bekerja yang sihat.

(15 marks/markah)

- (ii) Explain ways to improve the safety awareness to the workers.

Jelaskan cara meningkatkan kesedaran keselamatan bagi pekerja-pekerja.

(20 marks/markah)

- (iii) Suggest the safety measures to be implemented to prevent the accidents from reoccurring.

Cadangkan langkah keselamatan yang perlu dilaksanakan bagi mengelakkan kemalangan berulang.

(15 marks/markah)

3. [a] (i) Describe the benefits of Occupational Safety and Health Act (OSHA 1994) when compared to the Factory and Machinery Act (FMA 1967).

Huraikan kelebihan Akta Keselamatan dan Kesihatan Pekerjaan (OSHA 1994) berbanding dengan Akta Kilang dan Mesin (FMA 1967).

(20 marks/markah)

- (ii) Machine related accidents often occur in industries. Prevention procedures should be taken to avoid injuries to machine operators or other workers. Explain four common situations resulting in injuries caused by machine and list four types of guards designed to prevent hazards associated with machinery.

Kemalangan berkaitan mesin sering kali berlaku dalam industri. Prosedur pencegahan seharusnya diambil bagi mengelakkan kecederaan untuk operator mesin atau pekerja lain. Jelaskan empat situasi-situasi yang boleh mengakibatkan dalam kecederaan disebabkan oleh mesin dan senarai empat penghadang direka untuk menghalang bahaya yang dikaitkan dengan jentera.

(20 marks/markah)

- [b] You have been appointed as a Safety Engineer in a company ABC Sdn Bhd. Express your views on the following for the establishment of an effective Occupational Safety and Health Management System in your company:

Anda telah dilantik sebagai Jurutera Keselamatan dalam syarikat ABC Sdn. Bhd. Nyatakan pandangan anda tentang pengwujudan Sistem Pengurusan Keselamatan (Safety Management System - SMS) yang cekap:

- (i) Importance of Occupational Safety Health (OSH) Management System.

Kepentingan pelaksanaan Sistem Pengurusan Kesihatan Keselamatan.

(20 marks/markah)

- (ii) Benefits of the Occupational Safety Health (OSH) Management System.

Manfaat daripada pelaksanaan Sistem Pengurusan Kesihatan Keselamatan.

(20 marks/markah)

- (iii) Key factors to be considered for effective Safety Management System.

Faktor-faktor utama yang perlu pertimbangkan dalam pelaksanaan Sistem Pengurusan Keselamatan yang cekap.

(20 marks/markah)

PART B / BAHAGIAN B

4. A general manager new production plant intends to introduce a framework of general health and safety policy for staff and general operational arrangements.

Pengurus besar sebuah loji pembuatan yang baru berhasrat untuk memperkenalkan rangka kerja umum polisi kesihatan dan keselamatan untuk pekerja serta susunan operasi.

- (a) Provide the general terms used and outline three factors to be considered on preparing the policy.

Berikan terma umum yang digunakan dan berikan tiga faktor yang perlu diambil kira untuk menyediakan polisi tersebut.

(30 marks/markah)

- (b) Explain briefly on what is required for objectives to be set in the 'general statement of intent'.

Jelaskan secara ringkas tentang apa yang diperlukan untuk menghasilkan objektif di dalam 'maksud kenyataan umum'.

(30 marks/markah)

- (c) Differentiate what is meant by a proactive system compared to a reactive system in assessing the implementation of health and safety policies or program.

Bezakan sistem proaktif berbanding sistem reaktif di dalam menilai pelaksanaan polisi atau program kesihatan dan keselamatan.

(40 marks/markah)

5. [a] Outline what type of information are required in the evaluation on the effectiveness of an organization management of OSH.

Berikan garis panduan kasar tentang apakah jenis maklumat yang diperlukan di dalam penilaian kecekapan pengurusan organisasi suatu OSH.

(20 marks/markah)

- [b] Give reasons why there should be a performance indicator and an outcome indicator systems for internal auditing in an organization.

Berikan punca kenapa perlunya sistem penunjuk prestasi dan hasil untuk audit dalaman di dalam sesuatu organisasi.

(40 marks/markah)

- [c] In your opinion, what are the conditions that might warrant a review of the guidelines in accident preventions at work to be reported by the employees?

Pada pandangan anda, apakah keadaan yang mungkin memerlukan kaji semula garis panduan pencegahan kemalangan yang perlu dilaporkan oleh pekerja?

(40 marks/markah)

PART C / BAHAGIAN C**6. Occupational Safety and Fire Investigation:*****Kes Penyiasatan Keselamatan Pekerjaan dan Kebakaran:***

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 split 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.

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 hampir dengan tempat kemalangan telah menyebabkan berlakunya kebakaran daripada kimia tumpah tadi. Semua bahagian kilang telah dibakar habis dalam tempoh 50 minit. En. Fadli, Penyelia Keluaran, telah cedera daripada kebakaran kerana tidak sempat keluar dari kilang selepasnya berlaku kebakaran. Cik Siti, Pekerja Kilang, dalam keadaan panik telah cederakan tangannya dalam mesin pengeluaran kilang. En.Pairat, Pekerja Awam asing, telah cuba membantu mengubati tangan Cik Siti tetapi tersilap menggunakan ubat yang salah, oleh itu tangan Cik Siti menjadi lebih teruk.

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 course 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.

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 Laws.

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.

(50 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 apa yang anda dapat cadangkan supaya kemalangan tersebut tidak berulang lagi.

(50 marks/markah)

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

*Kelaskan, dan terangkan, tentang pelbagai jenis **bahaya (hazard)** dari segi pengurusan Keselamatan & Kesihatan Pekerjaan di tapak kerja sebuah kilang.*

(50 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 '**Penganalisaan Keselamatan Tugas**' dan '**Perancangan Balasan Kecemasan**' dan berikan pandangan anda bagaimana skema keselamatan tersebut dapat dilaksanakan dengan cekapnya dalam tempat kerja anda.*

(50 marks/markah)