



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013**

COURSE NAME : OCCUPATIONAL SAFETY AND HEALTH
COURSE CODE : BFC4111 / BFC43501
PROGRAMME : 3BFF / 4BFF
DATE OF EXAMINATION : JUNE 2013
DURATION : 1 HOUR
INSTRUCTION : ANSWER TWO (2) QUESTIONS ONLY

THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES

- Q1**
- (a) In Occupational Safety and Health, there are some terms being used such as HIRARC and ALARP.
- (i) State what is HIRARC stands for. (3 marks)
- (ii) State what is ALARP stands for. (2 marks)
- (b) Define what is meant by hazard, risk and danger. (9 marks)
- (c) Explain (5) sources of hazard. (5 marks)
- (d) In order to control the hazard, we have to come out with some recommendations according to the hierarchy provided. List six (6) hierarchies of the control measures and explain each one of them. (6 marks)
- Q2**
- (a) Explain in terms of bio-hazard potential, agent descriptions, examples and methods of control for each stage in the classification of the biological safety cabinet. (8 marks)
- (b) Pesticide is any compound or mixture used to prevent, destroy or keep out pests. Describe three (3) preventive measures for each of its condition prior to, during and after the use of pesticides. (9 marks)
- (c) All jobs are sure to deal with health risk. Explain briefly four (4) physical hazards, types of risky job and their effects on health. (8 marks)

Q3 Figure Q3 below shows the accident that happened to the sub-contractor and workers. To ensure work activities being carried out safely and healthily, potential hazards need to be identified, assessed and controlled.

Analyze the statements and photo given, prepare and produce HIRARC to ensure the hazard is as ALARP.

(25 marks)

Sub-contractor, worker found dead in manhole

SHAH ALAM, Sun. - A subcontractor and his worker were found dead in a five-meters deep manhole along Persiaran Kemajuan in Section 16 here today.

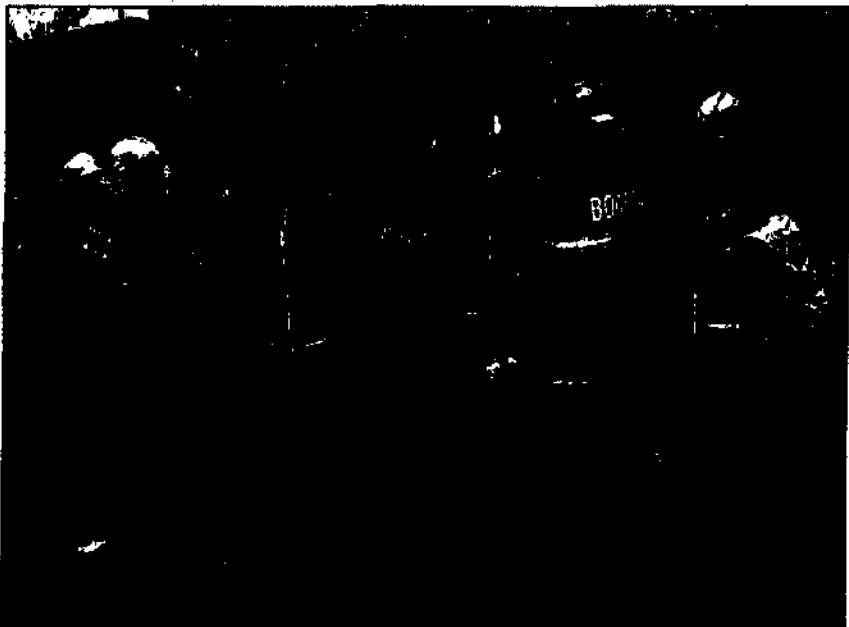
Lim Chin Chuan, 51, from Taman Camp, Port Klang and his worker identified only as Masturi, 24, from Jawa Timur, were believed to have died in toxic inhalation.

Firemen who went to the scene after receiving a call at 10.56am found Lim's body on top of his assistant in the manhole. They also found a ladder jutting out of the manhole.

Section 15 Fire and Rescue Department officer Borhan Madom said the two might have inhaled toxic gas on Friday while carrying out maintenance work.

The 13-member team pulled out Lim's body from the manhole about 1.25pm and Masturi's body was retrieved 20 minutes later.

The position of the bodies indicated that one of the two could have sought the help of the other after inhaling toxic gas in the manhole.



SUSPECTED TOXIC GAS: Firemen pulling out one of the bodies yesterday.

A car believed to have been driven by the sub-contractor was parked nearby. The scene attracted a large crowd, causing a traffic jam in the industrial area. According to one of Lim's relatives, Lim normally left the house about 7am and returned home about 6pm. However, relatives were unable to trace Lim's whereabouts until this morning. They lodged a report at the Pandamaran police station about 10am. The bodies were sent to University Malaya Medical Centre for post-mortem.

Figure Q3

- Q4**
- (a) List **four (4)** basic types of incidents and give an example for each. (4 marks)
 - (b) Describe what is meant by 'near miss'? (3 marks)
 - (c) Every incident happened should be followed by an investigation. Explain why the investigation should be conducted? (4 marks)
 - (d) When an incident occurred on the site, there will be two groups involved to perform the investigation that is the internal investigation team and external investigation team. Identify all members of each team. (6 marks)
 - (e) In every task, it will need a good strategy to perform the task efficiently and that goes the same way in performing an investigation. Explain briefly the investigation strategy according to the sequence. (8 marks)

END OF QUESTIONS

- S1** (a) Dalam keselamatan dan kesihatan pekerjaan, ada beberapa perkataan seperti HIRARC dan ALARP.
- (i) Nyatakan apakah maksud HIRARC. (3 markah)
- (ii) Nyatakan apakah maksud ALARP. (2 markah)
- (b) Terangkan dengan jelas maksud hazard, risiko dan bahaya. (9 markah)
- (c) Terangkan **lima (5)** punca-punca hazard. (5 markah)
- (d) Bagi usaha mengawal hazard, kita perlu membuat beberapa cadangan berpandukan kepada hirarki yang ada. Senaraikan dan terangkan struktur hirarki dalam mengukur kawalan risiko. (6 markah)
- S2** (a) Jelaskan dari segi potensi bio-hazard, deskripsi agen, contoh dan kaedah kawalan bagi setiap tahap dalam klasifikasi kabinet keselamatan biologi. (8 markah)
- (b) Racun makhluk perosak merupakan sebarang sebatian atau campuran yang digunakan untuk mencegah, memusnahkan atau menjauhkan sebarang makhluk perosak. Senaraikan **tiga (3)** langkah-langkah pencegahan bagi setiap satu keadaan masa iaitu sebelum, semasa dan selepas menggunakan racun makhluk perosak. (9 markah)
- (c) Semua pekerjaan pasti berhadapan dengan risiko terhadap kesihatan. Nyatakan **empat (4)** hazard fizikal dan kesannya terhadap kesihatan. (8 markah)
- S3** **Rajah S3** menunjukkan kemalangan yang berlaku terhadap sub-kontraktor serta pekerjaanya. Bagi memastikan aktiviti-aktiviti pembinaan dapat dijalankan secara selamat dan sihat, segala jenis hazard perlu dikenalpasti, dinilai serta di kawal. Analisis gambar dan penceritaan yang diberi, sediakan dan hasilkan HIRARC bagi memastikan bahaya kemalangan dapat dikurangkan secara praktikal (ALARP) (25 markah)
- S4** (a) Senaraikan **empat (4)** jenis kejadian dan berikan contoh bagi setiap satu. (4 markah)
- (b) Terangkan maksud 'kejadian nyaris' (3 markah)

- (c) Setiap kejadian yang berlaku perlulah disusuli oleh sebuah penyiasatan. Terangkan mengapakah penyiasatan ini perlu dilakukan?
(4 markah)
- (d) Sekiranya berlaku kemalangan ditempat kerja, terdapat dua kumpulan yang akan menjalankan siasatan iaitu penyiasat dalaman dan penyiasat luaran, senaraikan ahli yang terlibat di dalam kedua-dua penyiasatan.
(6 markah)

SOALAN TAMAT