

**CONFIDENTIAL**



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER 1  
SESSION 2012/2013**

**COURSE NAME** : OCCUPATIONAL SAFETY  
AND HEALTH

**COURSE CODE** : BFC 4111/BFC 43501

**PROGRAMME** : 4 BFF

**EXAMINATION DATE** : DECEMBER 2012/JANUARY 2013

**DURATION** : 1 ½ HOURS

**INSTRUCTION** : ANSWER TWO (2) QUESTIONS  
ONLY

**THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES**

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**Q1** As a Safety and Health Officer in your workplace, you are responsible for various aspects of safe work environment. You have to identify several important issues which must be address effectively.

(a) Briefly explain the hierarchy and the risk control measurement. (10 marks)

(b) As a Civil Engineer, explain in detail **three (3)** reasons why construction safety is important to us. (15 marks)

**Q2** **Figure Q2** shows the sub-contractor and workers dead in manhole at construction site. To ensure work activities being carried out safely and healthy, potential hazards need to be identified, assessed and controlled. Based on **Figure Q3**, develop HIRARC to ensure the potential hazards are as low as reasonable and practicable (ALARP).

(25 marks)

**Q3** Based on **Figure Q3**, interpret and discuss **five (5)** types of physical, chemical and biological hazard that occurred during the accident.

(25 marks)

**Q4** (a) List down **five (5)** principles of investigation. (5 marks)

(b) Explain briefly **three (3)** investigation techniques (5 marks)

(c) Based on **Figure Q4**, write an investigation report including the recommendations. You are allowed to make assumptions. (15 marks)

**TERJEMAHAN BAHASA MALAYSIA**

- S1** Sebagai seorang Pegawai Keselamatan dan Kesihatan Pekerjaan di tempat kerja, adalah menjadi tanggungjawab anda memastikan keselamatan persekitaran tempat kerja. Anda telah mengenalpasti beberapa isu penting yang harus diberi perhatian:
- (a) Terangkan secara ringkas hirarki dalam kaedah mengawal risiko. (10 markah)
  - (b) Sebagai seorang jurutera, terangkan dengan jelas **tiga (3)** perkara mengapa keselamatan dalam pembinaan begitu penting. (15 markah)
- S2** **Rajah 2** menunjukkan kematian pekerja kontrak dan sub-kontrak di "mainhole" di tapak bina. Bagi memastikan aktiviti-aktiviti pembinaan dapat dijalankan secara selamat dan sihat, segala jenis hazard perlu dikenalpasti, di nilai serta di kawal. Berdasarkan kepada **Rajah 2**, bangunkan HIRARC bagi memastikan bahaya penggunaan peranca dapat dikurangkan secara praktikal (ALARP). (25 markah)
- S3** Berdasarkan kepada **Rajah 3**, terangkan dan bincangkan **lima (5)** jenis hazard fizikal, kimia dan biologi yang berlaku semasa kejadian tersebut. (25 markah)
- S4**
- (a) Senaraikan **lima (5)** prinsip utama dalam penyiasatan kemalangan. (5 markah)
  - (b) Terangkan **tiga (3)** jenis teknik penyiasatan kemalangan (5 markah)
  - (c) Berdasarkan kepada **Rajah 4**, tuliskan satu laporan penyiasatan yang lengkap beserta cadangan. Anda dibenarkan untuk membuat andaian. (15 markah)

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FINAL EXAM

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# Sub-contractor, worker found dead in manhole

■ By Farush Khan  
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**SHAH ALAM, Sun.** — A sub-contractor and his worker were found dead in a five-metre 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 of toxic gas inhalation.

Firemen who went to the scene after receiving a call at 10.58am 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 Madon 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.

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



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

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.

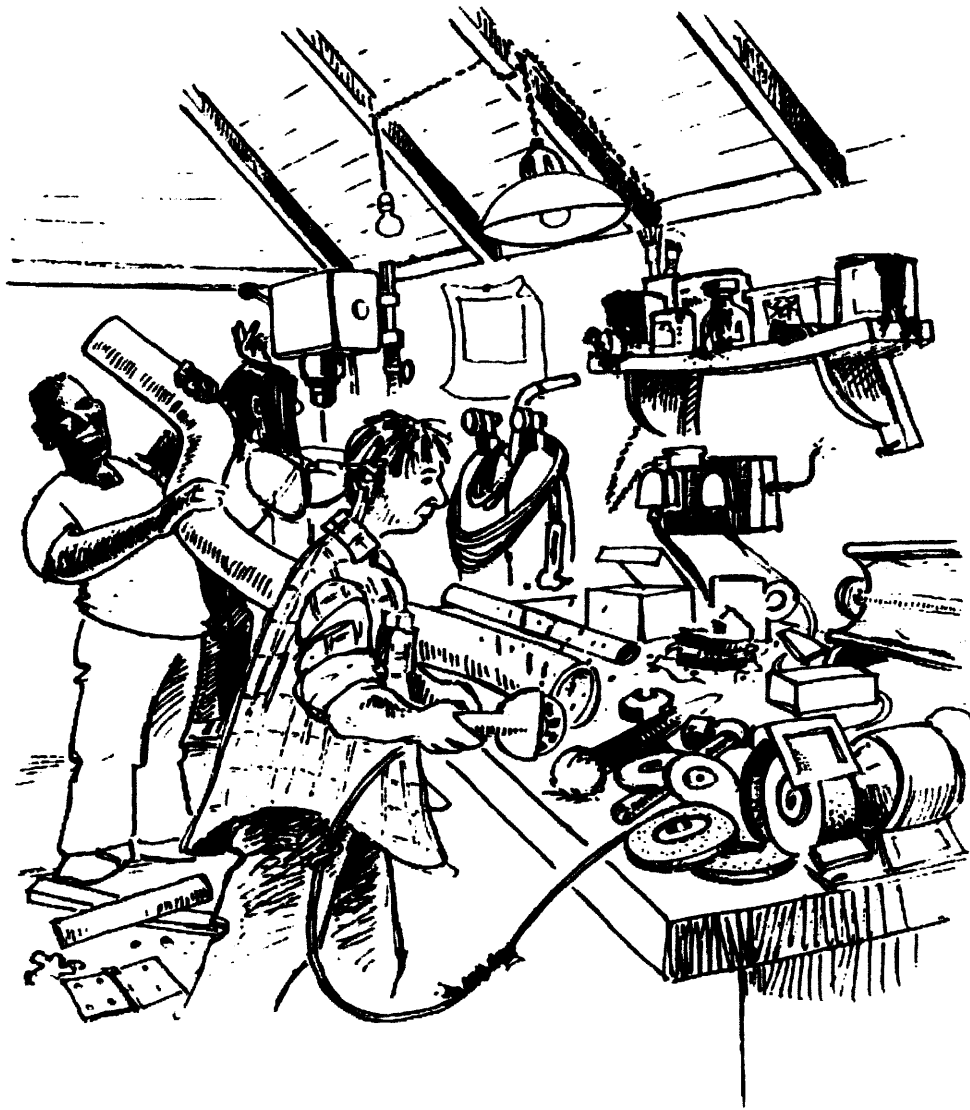
The bodies were sent to University Malaya Medical Centre for post-mortem.

Figure Q2

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**Figure Q3**

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**KUALA LUMPUR, Sun:**

**Two construction workers, both foreigners, were killed after a crane carrying building materials fell on them when its cable suddenly snapped.**

The incident occurred at 2.30pm at a construction site for a 38-storey office building at Jalan Bangsar Utama, here today.

The crane's cable was said to have snapped suddenly on the 22nd floor of the building which was almost 50 percent complete, and both victims who were working on the ground floor were crushed by the falling crane.

One of the victim's head was cracked while the other victim was badly crushed.

Police and Civil Defense Department personnel took about one hour to gather the pieces of the victims' bodies. Meanwhile, Brickfields OCPD ACP Wan Abdul Bari Wan Abdul Khalid, when contacted, confirmed the incident and classified it as sudden death.

"Both victims were Bangladeshi nationals aged between 30 and 40," he said. —  
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**Figure Q4**