
UNIVERSITI SAINS MALAYSIA

First Semester Examination
2010/2011 Academic Session

November 2010

EUP 222/3 – Engineers in Society *[Jurutera Dalam Masyarakat]*

Duration : 3 hours
[Masa : 3 jam]

Please check that this examination paper consists of **EIGHT (8)** pages of printed material before you begin the examination.

*[Sila pastikan bahawa kertas peperiksaan ini mengandungi **LAPAN (8)** muka surat yang bercetak sebelum anda memulakan peperiksaan ini.]*

Instructions : This paper contains **FOUR (4)** questions. Answer **ALL** questions. Each question should be answered separately in the answer booklet separate.

Arahan : Kertas ini mengandungi **EMPAT (4)** soalan. Jawab **SEMUA** soalan. Setiap soalan mesti dijawab didalam buku jawapan yang berasingan.

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

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

All questions **MUST BE** answered on a new page.

*[Semua soalan **MESTILAH** dijawab pada muka surat baru].*

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

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

Answer All Question.

PART A

1. a) Identify **three** key elements under each of the following management functions:
- i) Planning
 - ii) Staffing

Elaborate briefly the function of **each key element** described in (i) and (ii) through appropriate examples.

[12 marks]

- b) Define the following terms:
- i.) Problem Solving Technique
 - ii) Emotional Skills for Managers

Elaborate briefly the function of **each key element** described in (i) and (ii) through appropriate examples.

[13 marks]

PART B

2. a) Following are the account balances for Global Engineering Sdn Bhd for the year ended 31 Dec 2009.

	RM
Sales	1,500,000
Cost of good sold	430,000
Salary	240,000
EPF	26,400
SOCSSO	2,000
Maintenance cost	10,000
Utility	24,000
Telecommunication	12,000
Management fee	2,000
Office expenses	1,500
Travelling expenses	3,000
Insurance	4,000
Security	6,000
Stationary	1,200

Based on the information above you are required to prepare Income Statement for the year ended 31 Dec 2009.

[10 marks]

- b) The summary of Balance Sheet and Income Statement for Syarikat Gemilang Sdn Bhd are as follows:

Syarikat Gemilang Sdn Bhd
Balance Sheet
As at 31 Dec

	2008 <u>RM</u>	2009 <u>RM</u>
Cash	20,000	25,000
Account Receivable	45,000	50,000
Other Current Assets	85,000	90,000
Long term investment	70,000	75,000
Machinery and equipment	370,000	400,000
	590,000	640,000
Current liabilities	80,000	75,000
Long term loan	85,000	80,000
Ordinary shares, RM10 par	300,000	340,000
Retained earning	125,000	145,000
	590,000	640,000

Syarikat Gemilang Sdn Bhd
Income Statement
For the year ended 31 Dec

	2008 <u>RM</u>	2009 <u>RM</u>
Sales	700,000	740,000
(-) Return sales and allowance	50,000	40,000
Net sales	650,000	700,000
Cost of Goods Sold	400,000	420,000
Gross Profit	250,000	280,000
Operation expenses	218,000	236,000
Net Profit	32,000	44,000

You are required:

Calculate the following ratios for year 2008 and 2009

- i) Current ratio [4 marks]
- ii) Profitability ratio (net profit margin) [4 marks]
- iii) Debt ratio [4 marks]
- iv) Explain the status of the organization based on the ratios calculated. [3 marks]

PART C

- 3. Law of Torts, Criminal and Contract in many ways helps engineers in performing their jobs. Discuss. [25 marks]

PART D

- 4. a) Ethics is a branch of philosophy that is important in the professional code of conduct. Briefly explain its meaning and provide two (2) reasons why engineering ethics are required. [4 marks]
- b) Engineers must have the skill set and methodology to problem solving, including soft skill. Identify two (2) soft skills and briefly explain the importance of each skill in the engineering profession. [6 marks]

- c) Under the Royal Charter of The Institution of Civil Engineers United Kingdom, one of the requirements states that “All members shall develop their professional knowledge, skills and competence on a continuing basis.....” This implies that continuous professional development (CPD) is a necessity for professional engineers. Evaluate the advantages, disadvantages and limitations of CPD.

[15 marks]

Jawab semua soalan.

BAHAGIAN A

1. a) Kenal pasti **tiga** elemen di bawah setiap fungsi pengurusan berikut:

- i) Perancangan
- ii) Pengambilan staf

Huraikan secara ringkas fungsi setiap elemen utama yang dinyatakan di (i) dan (ii) dengan memberikan contoh-contoh yang sesuai.

[12 markah]

b) Define the following terms:

- i) Teknik Penyelesaian Masalah
- ii) Kemahiran Emosi untuk pengurus

Huraikan secara ringkas fungsi setiap elemen utama yang dinyatakan di (i) dan (ii) dengan memberikan contoh-contoh yang sesuai.

[13 markah]

BAHAGIAN B

2. a) Berikut ini adalah baki untuk akaun Global Engineering Sdn Bhd untuk tahun berakhir 31 Disember 2009.

	RM
Jualan	1,500,000
Kos barang jualan	430,000
Gaji	240,000
EPF	26,400
SOCSSO	2,000
Kos penyelenggaraan	10,000
Utiliti	24,000
Telikomunikasi	12,000
Kos pengurusan	2,000
Belanja pejabat	1,500
Belanja perjalanan	3,000
Insuran	4,000
Sekuriti	6,000
Alat tulis	1,200

Berdasarkan maklumat di atas anda dikehendaki menyediakan Penyata Pendapatan untuk tahun berakhir 31 Disember 2009.

[10 markah]

- b) *Ringkasan Lembaran Imbangan dan Penyata Pendapatan untuk Syarikat Gemilang Sdn Bhd adalah seperti berikut:-*

*Syarikat Gemilang Sdn Bhd
Lembaran Imbangan
Pada 31 Disember*

	2008 <u>RM</u>	2009 <u>RM</u>
<i>Tunai</i>	20,000	25,000
<i>Akaun belum terima</i>	45,000	50,000
<i>Lain-lain aset semasa</i>	85,000	90,000
<i>Pelaburan jangka panjang</i>	70,000	75,000
<i>Mesin dan peralatan</i>	370,000	400,000
	590,000	640,000
<i>Tanggungan semasa</i>	80,000	75,000
<i>Hutang jangka panjang</i>	85,000	80,000
<i>Saham biasa, RM10 par</i>	300,000	340,000
<i>Pendapatan terkumpul</i>	125,000	145,000
	590,000	640,000

*Syarikat Gemilang Sdn Bhd
Penyata Pendapatan
Bagi tahun berakhir 31 Disember*

	2008 <u>RM</u>	2009 <u>RM</u>
<i>Jualan</i>	700,000	740,000
<i>(-) Pulangan jualan dan elaun</i>	50,000	40,000
<i>Jualan bersih</i>	650,000	700,000
<i>Kos barang dijual</i>	400,000	420,000
<i>Untung kasar</i>	250,000	280,000
<i>Belanja operasi</i>	218,000	236,000
<i>Untung bersih</i>	32,000	44,000

Anda dikehendaki:-

Hitung nisbah-nisbah berikut bagi tahun 2005 dan 2006

- i) *Nisbah semasa* [4 markah]
- ii) *Nisbah keuntungan –margin untung bersih* [4 markah]

iii) *Nisbah hutang* [4 markah]

iv) *Jelaskan kedudukan syarikat berdasarkan nisbah nisbah di atas.*
[3 markah]

BAHAGIAN C

3. *Undang-undang Tort, Jenayah dan Kontrak banyak membantu dalam pelaksanaan kerja sebagai jurutera. Bincangkan.*
[25 markah]

BAHAGIAN D

4. a) *Ethik adalah satu cabang falsafah yang penting dalam kod etika profesional. Jelaskan dengan ringkas maknanya dan berikan dua (2) sebab mengapa etika kejuruteraan diperlukan.*
[4 markah]

b) *Jurutera mesti mempunyai set kemahiran dan kaedah untuk penyelesaian masaaalah, termasuk kemahiran insaniah. Kenalpasti dua (2) kemahiran insaniah dan jelaskan dengan ringkas kepentingan setiap kemahiran tersebut dalam bidang kejuruteraan.*
[6 markah]

c) *Dibawah “Piagam DiRaja Institusi Jurutera Awam United Kingdom”, salah satu keperluan menyatakan “ Semua ahli perlu membangunkan pengetahuan profesional mereka, kemahiran dan kecekapan secara berterusan....” Ini bermaksud pembangunan profesional berterusan (CPD) adalah satu keperluan untuk jurutera profesional. Buat penilaian kebaikan, keburukan dan terhadnya CPD.*
[15 markah]