SULIT

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI I : 2024/2025

DPB20093: BUSINESS MATHEMATICS

TARIKH : 04 DISEMBER 2024
MASA : 8.30 – 10.30 PAGI (2 JAM)

Kertas ini mengandungi **SEMBILAN (9)** halaman bercetak.

Soalan Struktur : 4 soalan

Dokumen sokongan yang disertakan : Formula

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

INSTRUCTION:

This section consists of **FOUR (4)** questions. Answers **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **EMPAT (4)** soalan. Jawab **SEMUA** soalan.*

QUESTION 1

SOALAN 1

(a) List

CLO1 *Senaraikan*

i) **TWO (2)** examples of linear equations.

***DUA (2)** contoh persamaan linear.*

[2 marks]

[2 markah]

ii) The terms a, b, and c in this quadratic equation: $3x^2 - x - 15 = 0$

Sebutan a, b, dan c dalam persamaan kuadratik ini:$3x^2 - x - 15 = 0$

[3 marks]

[3 markah]

(b) Simplify the equation below:

CLO1 *Permudahkan persamaan dibawah:*

i.) $2x + 2 = 12$ [2 marks]

[2 markah]

ii.) $x + y = 10$

$x - y = 2$ [4 marks]

[4 markah]

iii.) $x^2 - 21 + 4x = 0$ [4 marks]

[4 markah]

CLO1

(c) Adeen Harith Sdn. Bhd. has four production factories. The following is a summary related to the demand and supply of his company's product.

Adeen Harith Sdn. Bhd. mempunyai empat kilang pengeluaran. Berikut adalah ringkasan berkaitan dengan permintaan dan penawaran produk Syarikat beliau.

Demand *Permintaan*	Supply *Penawaran*
A =2,100 units	I= 1,600 units
B= 2,000 units	II = 1,800 units
C= 1,900 units	III = 1,200 units
	IV = 1,400 units

Based on the information given, simplify the transportation matrix below with the North West corner method.

Berdasarkan kepada maklumat yang diberi, permudahkan matrik pengangkutan dibawah dengan kaedah pepenjuru Barat Laut.

Supply Demand	I	II	III	IV	.....
A	50	100	60	40	.....
B	80	110	70	30	.....
C	70	90	50	80	.....
.....	.....	.....	.....	.....	.....

[10 marks]

[*10 markah*]

QUESTION 2

SOALAN 2

CLO2

(a) Count the contribution margin ratio for Ihsan company if they sell a product for RM 8.60 per unit and the variable cost is RM450 for 100 units.

Kira nisbah margin caruman bagi syarikat Ihsan jika mereka menjual sesuatu produk pada harga RM 8.60 seunit dan kos berubah ialah RM450 untuk 100 unit.

[5 marks]

[*5 markah*]

CLO2

(b) SuperGood Co. Ltd produces a new type of robot toy. The following data was obtained from SuperGood Co. Ltd: -

SuperGood Co. Ltd menghasilkan sejenis mainan robot baharu. Data berikut diperolehi daripada SuperGood Co. Ltd iaitu: -

Selling price (unit)	=	RM150
Variable cost (100 units)	=	RM3, 000
Fixed cost	=	RM98, 000
Harga jualan (seunit)	=	*RM150*
Kos berubah (100 unit)	=	*RM3, 000*
Kos tetap	=	*RM98, 000*

Based on the data given, you are required to interpolate: -

Berdasarkan data yang diberikan, anda dikehendaki menginterpolasi: -

(i) The total revenue if 1,000 units of robot toy are sold.

Jumlah hasil jika 1, 000 unit mainan robot dijual.

[3 marks]

[3 *markah*]

(ii) The profit gained by the company if 30% of 4, 000 units robot toy are sold.

Keuntungan yang diperolehi oleh syarikat jika 30% daripada 4, 000 unit mainan robot telah dijual.

[7 marks]
[7 *markah*]

CLO2 (c) Ida & Ina Sdn Bhd plans to produce ceramic based products. The following information was provided: -

Syarikat Ida & Ina Sdn Bhd merancang untuk mengeluarkan produk berasaskan seramik seperti berikut: -

Total sales volume	=	7, 000 units
Price per unit	=	RM6.50
Variable cost	=	RM4.80
Fixed cost	=	RM33, 000
Jumlah jualan	=	*7, 000 units*
Harga per unit	=	*RM6.50*
Kos berubah	=	*RM4.80*
Kos tetap	=	*RM33, 000*

Based on the data given, you are required to calculate: -

Berdasarkan data yang diberikan, anda dikehendaki mengira: -

(i) Contribution margin.

Margin sumbangan.

[3 marks]

[3 *markah*]

(ii) The **quantity** and **value** of the breakeven point.

*Titik pulang modal dalam **unit** dan **nilai**.*

[7 marks]

[7 *markah*]

QUESTION 3

SOALAN 3

CLO2

(a) On 8 August 2023, Ziana put RM1, 500 in a savings account that offers a simple interest rate of 3% per annum. Count the amount in her account on 30 November 2023 using the Banker's Rule.

Pada 8 Ogos 2023, Ziana meletakkan RM1, 500 ke dalam akaun simpanan yang menawarkan kadar faedah mudah sebanyak 3% setahun. Kira amaun dalam akaunnya pada 30 November 2023 dengan menggunakan Peraturan Jurubank.

[5 marks]

[*5 markah*]

CLO2

(b) Mr. Winson wants to buy a semi-detached house at Taman Sedora worth RM450, 000. The developers required 5% as a down payment and the balance of price can be borrowed from the financial institution which offers interest at 3.5% per annum for 30 years. Besides, Mr. Winson also had to pay extra payment such as lawyer fee RM4, 500 and insurance RM6, 500. extrapolate the total interest paid and the monthly payment.

Encik Winson ingin membeli rumah berkembar di Taman Sedora bernilai RM450, 000. Pemaju memerlukan 5% sebagai bayaran pendahuluan dan baki harga boleh dipinjam daripada institusi kewangan yang menawarkan faedah sebanyak 3.5% setahun selama 30 tahun. Selain itu, Encik Winson juga perlu membayar bayaran tambahan seperti yuran guaman sebanyak RM4, 500 dan insurans sebanyak RM6, 500. Ekstrapolasikan jumlah faedah yang dibayar dan bayaran bulanan.

[10 Marks]
[10 Markah]

CLO2 (c) Zazizu Company had a note dated 03 August 2023 for RM5, 700 with interest at 8% per annum. The term of the note was 100 days. If the Zazizu company discounted the note on 21 October 2015 at a bank that charged a discount rate of 10%, calculate: -

Syarikat Zazizu mempunyai nota bertarikh 3 Ogos 2023 yang bernilai RM5, 700 dengan kadar faedah sebanyak 8% setahun. Tempoh nota adalah selama 100 hari. Jika syarikat Zazizu itu mendiskaunkan nota tersebut pada 21 Oktober 2015 di bank yang mengenakan kadar diskaun sebanyak 10%, kirakan: -

(i) The maturity date
Tarikh matang

[2 Marks]
[2 Markah]

(ii) The maturity value

Nilai matang

[4 Marks]

[4 Markah]

(iii)The discount period

Tempoh diskaun

[1 Mark]

[1 Markah]

(iv)The proceeds

Hasilnya

[3 Marks]

[3 Markah]

QUESTION 4

SOALAN 4

CLO2 (a) Recognize the differences between trade and cash discounts that you have learned.

Kenalpasti perbezaan diantara diskaun perdagangan dan tunai yang telah anda pelajari.

[5 marks]

[5 markah]

CLO2 (b) Simplify both situation:

Permudahkan situasi berikut:

(i) Adeline sells a viral product for RM300 less 20% while Adeel sells the same viral product for RM600 less 40%. Find the net price of the viral product for the two affiliates.

Adeline menjual produk viral pada harga RM300 kurang 20% manakala Adeel menjual produk viral yang sama pada harga RM600 kurang 40%. Cari harga bersih produk viral untuk dua affiliate ini.

[6 marks]

[6 markah]

(ii) The net price of an LCD with 25% trade discount is RM 1,500. Find out the list price

Harga bersih LCD dengan diskaun dagangan 25% ialah RM1,500. Cari harga senarai

[4 marks]

[4 markah]

CLO2 (c) Solve the problems below:

Selesaikan masalah dibawah:

(i) A vacuum cleaner set with a catalog price of RM2,000 is offered a chain discount of 30%, 10% and 5%. Calculate the net price.

Set pembersih hampagas dengan harga katalog RM2,000 ditawarkan diskaun berantai sebanyak 30%, 10% dan 5%. Kira harga bersih.

[5 marks]

[*5 markah*]

(ii) A product is advertised at RM1,500 less 25%, 10% and 5%. Find the single discount equivalent.

Sebuah produk diiklankan pada hara RM1,500 ditolak 25%, 10% dan 5%. Cari setara diskaun tunggal.

[5 marks]

[*5 markah*]

SOALAN TAMAT

Formula Business Mathematics

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

P = pQ – VCQ – FC

P = TR – TC

TC = VCQ + FC

TR = pQ

TVC = VCQ

$$BEP(Q) = \frac{FC}{p - VC}$$

$$BEP(RM) = BEP\ (Q)x\ p$$

CM = p – VC

$$CM = \frac{p - VC}{p}\ x\ 100$$

I = Prt

I = IP – CP

IP = CP + i

$$I = \left(\frac{\mathrm{Pr} + Yr}{2}\right) t\ ,\ i = \frac{\mathrm{Pr}(t+1)}{2}$$

$$y = \frac{P}{t}$$

DP = Rate (%) x CP

P = CP – DP + other payments

S = P + I

S = P (1+rt)

D = Sdt

H = S-D

$$MP = \frac{s}{n} @ \frac{s}{12t}$$

IP = DP + (MP x n) @ DP + s @ DP + P + I

$$R = \frac{\sum n}{\sum N}\ x\ I \text{ and } \sum n = \left(\frac{n+1}{2}\right) n,\ \sum n = \left(\frac{n+1}{2}\right) N,$$

$$S = P\left(1 + \frac{i}{m}\right) \text{^} n.m$$

$$S = \frac{S}{\left(1+\frac{i}{m}\right)^{n.m}}$$

D = r X LP

NP = LP – D , NP = LP (1-r)

NP = LP ($1-r_1$) ($1-r_2$) …

$$LP = \frac{NP}{1 - r}$$

r = 1- ($1-r_1$) ($1-r_2$) ($1-r_3$) …

EP = (n x MP) – R