2

POLITEKNIK MALAYSIA

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENGAJIAN POLITEKNIK
KEMENTERIAN PENDIDIKAN MALAYSIA

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI DISEMBER 2013

PB101: STATISTICS

TARIKH : 17 APRIL 2014
MASA : 2.30 PM - 4.30 PM (2 JAM)

Kertas ini mengandungi **LIMA (5)** halaman bercetak.
Bahagian A: Struktur (4 soalan)
Dokumen sokongan yang disertakan : Kertas Graf / Formula

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

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INSTRUCTION:
This section consists of **FOUR (4)** subjective questions. Answer **ALL** questions.

ARAHAN :
*Bahagian ini mengandungi **EMPAT (4)** soalan subjektif. Jawab semua soalan*

QUESTION 1
SOALAN 1

CLO1
C1

(a) Define the following terms:
Definisikan setiap istilah di bawah:

i) Statistics.
Statistik

(3 marks)
(3 markah)

ii) Population and sample
Populasi dan sampel

(4 marks)
(4 markah)

iii) Direct questionnaire
Soal selidik langsung

(2 marks)
(2 markah)

iv) Telephone interview
Temuduga telefon

(2 marks)
(2 markah)

v) Face-to-face interview
Temuduga Secara Bersemuka

(2 marks)
(2 markah)

CLO1
C2

(b) List Four (4) probability sampling technique and explain it briefly.
Senaraikan Empat (4) teknik persampelan kebarangkalian dan terangkannya secara ringkas.

(12 marks)
(12 markah)

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QUESTION 2
SOALAN 2

The data below shows the age distribution result from Larriz Restaurant survey on a sample of 50 customers who drink coconut shake in the restaurant.
Data di bawah menunjukkan keputusan taburan umur dari kajian yang dilakukan oleh Restoran Larriz terhadap 50 orang pelanggan yang meminum jus kelapa di restorannya.

40	27	32	28	20	37	35	30	36	26
38	33	38	28	33	37	29	46	39	32
32	38	31	39	35	27	40	33	38	21
44	48	36	50	43	23	41	45	35	45
21	25	40	52	37	27	45	52	45	37

From the data above:
Daripada data di atas:

CLO1
C2

(a) Find the number of classes, range and size of class.
Cari bilangan kelas, julat dan saiz selang kelas.

(5 marks)
(5 markah)

CLO1
C2

(b) Convert the data above into a frequency distribution table with class interval, tally frequency, relative frequency and class boundaries.
Tukarkan data di atas dalam bentuk jadual taburan kekerapan yang mengandungi selang kelas, gundalan, kekerapan, kekerapan relatif dan sempadan kelas.

(8 marks)
(8 markah)

CLO1
C2

(c) Transform the data into a histogram and polygon graph (on a graph paper).
Ubahkan data tersebut dalam bentuk histogram dan graf polygon (atas kertas graf).

(5 marks)
(5 markah)

CLO1
C2

(d) Illustrate the data into a 'more than' ogive on a graph paper.
Ilustrasikan data dalam bentuk ogif 'lebih daripada' di atas kertas graf.

(7 marks)
(7 m

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QUESTION 3

SOALAN 3

National Library has kept the following record of the number of visitors that visit the place in December 2013.

Perpustakaan Negara telah menyimpan rekod bilangan pengunjung yang berkunjung ke tempat tersebut pada bulan Disember 2013

No. of visit *Bilangan lawatan*	Frequency *Kekerapan*	Cumulative frequency *Kekerapan terkumpul*
1-5	2	p
6-10	6	q
11-15	8	r
16-20	5	s
21-25	2	t

CLO1
C1

(a) Determine the value of p, q, r, s and t.
Tentukan nilai p, q, r, s dan t.

(5 marks)
(5 markah)

CLO1
C2

(b) Compute the following based on the given record:
Kirakan yang berikut berdasarkan rekod yang diberikan:

i) Range
Julat

(3 marks)
(3 markah)

CLO1
C2

ii) Value of first quartile (Q1) and third quartile (Q3)
Nilai quartil pertama(Q1) dan quartil ketiga (Q3)

(10 marks)
(10markah)

CLO1
C2

iii) Interquartile range and quartile deviation
Julat antara kuartil dan sisihan kuartil

(7 marks)
(7 m

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QUESTION 4

SOALAN 4

The quarterly sales (in RM Thousand) of bottles of Riddo soft drink for the year 2010 to 2013 are as follows :

Jualan bagi setiap suku tahun (dalam RM Ribu) botol minuman ringan Riddo bagi tahun 2010 hingga 2013 adalah seperti berikut :

Year/Quarter *Tahun/Sukuan*	2010	2011	2012	2013
1	38	43	48	53
2	27	32	37	48
3	33	38	44	50
4	48	53	58	65

CLO2 C1 (a) List down the four components of a time series.

Senaraikan empat komponen siri masa

(2 marks)
(2 markah)

CLO2 C2 (b) Illustrate the above data in a graph paper.

Gambarkan data yang diberikan di atas kertas graf.

(4 marks)
(4 markah)

CLO2 C3 (c) Use the method of moving average to find the trend value.

Gunakan *kaedah purata bergerak, untuk mendapatkan nilai haluan.*

(15 marks)
(15 markah)

CLO2 C2 (d) Predict the trend sales for Second (2^{nd}) Quarter of 2014

Ramalkan jualan bagi Sukuan ke 2 tahun 2014

(4 marks)
(4 markah)

SOALAN TAMAT

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FORMULA

$k = 1 + 3.3 \log_{10} n$

Range = Highest Observed Value – Lowest Observed Value

$I = \frac{range}{k}$

$\bar{x} = \frac{\sum fixi}{\sum fi}$

$\tilde{X} = Lm + \left[\frac{\frac{\Sigma f_i}{2} - \Sigma f_m - 1}{f_m}\right]C$

$\hat{X} = Lb + \left(\frac{\Delta 1}{\Delta 1 + \Delta 2}\right)C$

$\hat{x} = \bar{x} - 3(\bar{x} - \tilde{x})$

$Q_1 = Lb + \left(\frac{\frac{N}{4} - \sum fBQ\,1}{fQ\,1}\right)C$

$Q_3 = Lb + \left(\frac{\frac{3N}{4} - \sum fBQ\,3}{fQ\,3}\right)C$

$D_k = Lb + \left(\frac{k\left(\frac{N}{10}\right) - \sum fBDk}{fDk}\right)C$

$P_k = Lb + \left(\frac{k\left(\frac{N}{100}\right) - \sum fBPk'}{fPk}\right)C$

Mean Deviation $= \frac{1}{\sum fi}[\sum f|x - \bar{x}|]$

$I = \frac{P_t}{P_o} \times 100$

$I = \frac{\Sigma P_t}{\Sigma P_o} \times 100$

$I = \frac{1}{n}\Sigma\left(\frac{P_t}{P_o} \times 100\right)$

$I = \frac{\Sigma(P_tW)}{\Sigma(P_oW)} \times 100$

$IL = \frac{\Sigma(P_tQ_o)}{\Sigma(P_oQ_o)} \times 100$

$IP = \frac{\Sigma(P_tQ_t)}{\Sigma(P_oQ_t)} \times 100$

$IF = \sqrt{\left(\frac{\sum P_tQ_o}{\sum P_oQ_o}\right) \times \left(\frac{\sum P_tQ_t}{\sum P_oQ_t}\right)}$

$IM = \frac{\Sigma P_t(Q_o + Q_t)}{\Sigma P_o(Q_o + Q_t)} \times 100$

$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$

$r = 1 - \left(\frac{6(\sum d^2)}{n(n^2 - 1)}\right)$

$y = a + bx \quad ; b = \frac{n\sum xy - (\sum x)(\sum y)}{n\sum x^2 - (\sum x)^2}$

$; a = \frac{\sum y}{n} - b\frac{\sum x}{n}$

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