

SULIT

PB101: STATISTICS

SECTION A : 100 MARKS
BAHAGIAN A : 100 MARKAH

INSTRUCTION:

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

ARAHAN :

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

QUESTION 1

SOALAN 1

(a) Give an example for each of the following terms:

Berikan contoh bagi setiap istilah yang berikut:

(i) Primary and secondary data. [3 marks]

Data utama dan sekunder. [3 markah]

(ii) Discrete and continuous data. [3 marks]

Data diskret dan selanjar. [3 markah]

(iii) Quantitative and qualitative data. [3 marks]

Data kuantitatif dan kualitatif. [3 markah]

(b) For each of the following, identify whether it is the numerical data or categorical data.

Bagi setiap yang berikut, kenalpasti sama ada ianya data numerikal atau data kategori.

(i) How many pets do you have?

Berapa banyak haiwan peliharaan yang anda ada?

SULIT

POLITEKNIK
Jabatan Pengajian Politeknik

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENGAJIAN POLITEKNIK
KEMENTERIAN PENGAJIAN TINGGI

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI DISEMBER 2012

PB101: STATISTICS

TARIKH : 30 APRIL 2013

TEMPOH : 2 JAM (11.15 A.M – 1.15 P.M)

Kertas ini mengandungi **LAPAN (8)** halaman bercetak.

Bahagian A: Subjektif/Kuantitatif (4 soalan)

Dokumen sokongan yang disertakan: Formula

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

CLO1
C1

Based on the above scenario:

Berdasarkan senario di atas:

- (i) State the population of the study. [2 marks]
Nyatakan populasi kajian. [2 markah]
- (ii) Identify the variable [2 marks]
Kenalpasti pembolehubah yang terlibat. [2 markah]
- (iii) Identify the sampling technique used by the professor. [2 marks]
Kenalpasti teknik persampelan yang digunakan oleh profesor. [2 markah]
- (iv) Determine the data collection method used by the professor and state the advantage of the method used.
Tentukan kaedah pengumpulan data yang digunakan oleh profesor dan nyatakan kelebihan menggunakan kaedah tersebut.
- [5 marks]
[5 markah]

- (ii) How many hours do you spend for watching TV in a week?
Berapa jam dalam seminggu anda peruntukkan untuk menonton TV?
- (iii) What is your favorite sport?
Apakah sukan kegemaran anda?
- (iv) What kind of music do you like best?
Apakah jenis muzik yang anda paling suka?
- (v) What kinds of snacks do you like?
Apakah jenis makanan ringan yang awak suka?

[5 marks]

[5 markah]

- (c) "A university professor wanted to analyze in depth on the absenteeism of employees in an organization at the Gencore (M) Sdn. Bhd. in helping the manager to increase employees' commitment to the organization. The professor divides the employees according to their ethnic groups and plans to randomly select 20% of employees from each ethnic group. Each of the selected employee has to complete a set of questionnaire given by the professor."
"Seorang profesor universiti hendak menganalisis secara mendalam mengenai masalah ketidakhadiran pekerja dalam organisasi di Gencore (M) Sdn. Bhd. untuk membantu pengurus meningkatkan komitmen pekerja terhadap organisasi. Profesor berkenaan membahagikan pekerja-pekerja kepada beberapa kumpulan etnik dan merancang untuk memilih secara rawak 20% pekerja dari setiap kumpulan etnik. Kemudian, setiap pekerja yang dipilih perlu melengkapkan satu set soal selidik yang diberikan oleh profesor"

CLO 1
C2

- iii. Quartile deviation
Sisihan kuartil

[9 marks]

[9 markah]

CLO 1
C2

- (b) Farhan, a best friend of Adam also has launched his new toy shop called BoboiBoy Tanah's Shop. He find that the coefficient of variation is 25%. Calculate the coefficient of variation for Ultraman Tayo's Shop. Compare and make a conclusion based on your answer.

Farhan, sahabat baik Adam juga baru sahaja melancarkan kedai mainan barunya iaitu Kedai BoboiBoy Tanah. Beliau mendapati pekali ubahan sebanyak 25%. Kirakan pekali ubahan bagi Kedai Ultraman Tayo. Bandingkan dan buat kesimpulan berdasarkan jawapan anda.

[5 marks]

[5 markah]

QUESTION 2

SOALAN 2

Adam has just launched his new toy shop called Ultraman Tayo's Shop. He is interested to determine the number of customer who visit his shop within 1 month. Table 1 shows the data recorded.

Adam baru sahaja melancarkan pembukaan kedai mainan barunya iaitu Kedai Ultraman Tayo. Beliau berminat untuk menentukan bilangan pelanggan yang melawat kedainya itu dalam tempoh sebulan. Data yang diambil telah direkodkan seperti berikut.

Table 1: Number Of Customer visit Ultraman Tayo's Shop

Jadual 1: Bilangan Pelanggan yang Mengunjungi Ultraman Tayo's Shop

Day <i>Hari</i>	No of customer <i>Bilangan pelanggan</i>
1 – 5	20
6 – 10	15
11 – 15	10
16 – 20	16
21 – 25	22
26 - 30	17

- (a) Based on the above information, you are required to calculate:

Berdasarkan maklumat di atas, anda dikehendaki untuk mengira:

CLO 1
C2

- i. Mean
Min

[5 marks]

[5 markah]

CLO 1
C2

- ii. Standard deviation
Sishan piawai

[6 marks]

[6 markah]

Statistics	51	55	66	72	66	78	66	88	80	26
Mathematic	55	55	72	80	63	74	61	91	78	27

CLO1
C2

Using the Spearman Rank Correlation Coefficient, state the conclusions on the relationship between the result of Mathematics and Statistics

Dengan menggunakan Koefisien Korelasi Pangkat Spearman, berikan kesimpulan tentang hubungan di antara keputusan markah Matematik dan Statistik.

[10 marks]
[10 markah]

QUESTION 4**SOALAN 4**

The following table shows the annual sales of a kitchen appliances company.

Jadual berikut menunjukkan jualan tahunan bagi syarikat peralatan dapur.

Year <i>Tahun</i>	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sales <i>Jualan</i> (in RM Thousand)	150	145	144	154	132	175	161	158	136	159	145

CLO 2
C3

- a) Prepare a four - year moving average.
Sediakan purata bergerak empat tahun.

[20 marks]
[20 marks]

CLO 2
C2

- b) Forecast sales for 2014.
Ramalkan jualan bagi tahun 2014.

[5 marks]
[5 marks]

SOALAN TAMAT**QUESTION 3****SOALAN 3**

- a. In a study of the frequency of chicken crowing (Y) the ambient temperatures (X) was recorded and presented in the table below.

Dalam suatu kajian tentang kekerapan berkokok (Y) sejenis ayam, suhu persekitaran (X) dicatat dan dipersembahkan dalam jadual di bawah.

Temperatures (X)	Chicken Crowing (Y)
30	14
28	12
26	10
24	9
22	7
20	6
18	6
16	5
14	3
12	2

CLO1
C2

Find the coefficient of the Pearson Product Moment for the data and give the conclusions.

Kira pekali hasil darab produk momen Pearson bagi data di atas dan beri kesimpulan.

[15 marks]
[15 markah]

- b. The following table shows the results of the final examination for the course of Statistics (X) and Mathematic (Y) for 10 students of DAT 2A.

Jadual berikut menunjukkan keputusan peperiksaan akhir dalam kursus Statistik (Y) dan Matematik (X) bagi 10 orang pelajar kelas DAT2A.

FORMULA

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

Range = Highest Observed Value - Lowest Observed Value

$$l = \frac{\text{range}}{k}$$

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

$$\bar{X} = Lm + \left[\frac{\frac{\sum fi}{2} - \sum f_{..}}{f_m} \right] C$$

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

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

$$Q_1 = Lb + \left(\frac{\frac{N}{4} - \sum f_{BQ1}}{f_{Q1}} \right) C$$

$$Q_3 = Lb + \left(\frac{\frac{3N}{4} - \sum f_{BQ3}}{f_{Q3}} \right) C$$

$$D_k = Lb + \left(\frac{k \left(\frac{N}{10} \right) - \sum f_{BDk}}{f_{Dk}} \right) C$$

$$P_k = Lb + \left(\frac{k \left(\frac{N}{100} \right) - \sum f_{BPk}}{f_{Pk}} \right) C$$

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

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

$$I = \frac{\sum P_i}{\sum P_o} \times 100$$

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

$$I = \frac{\sum (P_i W)}{\sum (P_o W)} \times 100$$

$$II = \frac{\sum (P_i Q_o)}{\sum (P_o Q_o)} \times 100$$

$$IP = \frac{\sum (P_i Q_i)}{\sum (P_o Q_i)} \times 100$$

$$IF = \sqrt{\left(\frac{\sum P_i Q_o}{\sum P_o Q_o} \right) \times \left(\frac{\sum P_i Q_i}{\sum P_o Q_i} \right)}$$

$$IM = \frac{\sum P_i (Q_o + Q_i)}{\sum P_o (Q_o + Q_i)} \times 100$$

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

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

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

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