

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI JUN 2017

DPB 1013 : STATISTICS

TARIKH : 28 OKTOBER 2017

MASA : 11.15 PAGI - 1.15 PETANG (2 JAM)

Kertas ini mengandungi **SEPULUH (10)** halaman bercetak.

Struktur (4 soalan)

Dokumen sokongan yang disertakan:

Kertas Graf, Formula, Table Normal Distribution, Table t Distribution

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

INSTRUCTION:

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

ARAHAN :

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

QUESTION 1**SOALAN 1**

CLO1
C1

- (a) Define the following terms:

Definisikan setiap istilah di bawah:

- i) Statistics

Statistik

(2 marks)

(2 markah)

- ii) Population and sample

Populasi dan sampel

(3 marks)

(3 markah)

- (b)

CLO 1
C1

- i) The following table shows the weights of 100 durians produced from a farm. Determine the value of v, w, x, y and z.

Jadual di bawah menunjukkan berat bagi 100 biji durian yang dihasilkan dari sebuah ladang. Tentukan nilai v, w, x, y dan z.

Weight (kg) <i>Berat (kg)</i>	Number of Durians <i>Bilangan Durian</i>	Cumulative Frequency <i>Kekerapan Terkumpul</i>
4-6	12	v
6-8	8	w
8-10	30	x
10-12	24	y
12-14	26	z

(5 marks)

(5 markah)

CLO 1
C1

- ii) List **THREE (3)** advantages and **TWO (2)** disadvantages of using mode as a measurement of Central Tendency.

Senaraikan TIGA (3) kebaikan dan DUA (2) keburukan menggunakan mode sebagai ukuran kecenderungan memusat.

(5 marks)

(5 markah)

CLO 1
C2

- (c) Vivian has just launched her new scarf called *ViVy*. She is interested to determine the number of customer who visits her shop to buy *ViVy* scarf within one month. Table 1 shows the data .

Vivian baru sahaja melancarkan tudung barunya iaitu ViVy. Beliau berminat untuk menentukan bilangan pelanggan yang melawat kedainya untuk membeli tudung ViVy dalam tempoh sebulan. Jadual 1 menunjukkan data:

Table 1: Number of Customer visit and buy *ViVy* Scarf

Jadual 1: Bilangan Pelanggan yang melawat dan membeli tudung ViVy

Day	Number of Customer
1-5	10
6-10	15
11-15	20
16-20	17
21-25	24
26-30	14

Based on the above information, calculate:

Berdasarkan informasi di atas, kirakan

- i) Median

Median

(6 marks)

(6 markah)

- ii) Mode

Mod

(4 marks)

(4 markah)

QUESTION 2
SOALAN 2

The following data shows the age and number of passengers of a taxi within a week in the city of Melaka.

Berikut merupakan data-data berkaitan umur dan bilangan penumpang sebuah teksi dalam masa satu minggu di bandar Melaka.

Age (year) <i>Umur (Tahun)</i>	Number of passenger <i>Bilangan Penumpang</i>
5 - 9	3
10 - 14	7
15 - 19	11
20 - 24	18
25 - 29	28
30 - 34	17
35 - 39	14
40 - 44	8
45 - 49	4

You are required to:

Anda dikehendaki:

CLO1
C2

- (a) Find the Pearson's Coefficient of Skewness 2
Tentukan Sukatan Kepencongan Pearson 2

(15 marks)
 (15 markah)

CLO 1
C1

- (b) Calculate the mean deviation
Kirakan Sisihan Min

(10 marks)
 (10 markah)

QUESTION 3**SOALAN 3**

- (a) The marks of 10 students in English and Mandarin tests are as follow:

Markah 10 orang pelajar dalam ujian Bahasa Inggeris dan Mandarin adalah seperti berikut:

Student <i>Pelajar</i>	1	2	3	4	5	6	7	8	9	10
English marks (x) <i>Markah Bahasa Inggeris (x)</i>	12	8	16	12	7	10	12	16	12	9
Mandarin marks (y) <i>Markah Mandarin (y)</i>	6	5	7	7	4	6	8	13	10	10

You are required to:

Anda dikehendaki:

CLO1
C1

- (i) Draw a scatter diagram for the above data.
Lakarkan gambar rajah sebaran bagi data di atas.

(5 marks)
(5 markah)

CLO 1
C1

- (ii) Identify the Spearman's coefficient of rank correlation.
Kenal pasti koefisien korelasi pangkat Spearman

(8 marks)
(8 markah)

CLO 1
C1

- (iii) Explain the result based on the answer you obtained in (b)
Terangkan keputusan berdasarkan kepada jawapan yang anda perolehi pada soalan (b)

(2 marks)
(2 markah)

CLO1
C2

- (b) Based on the following data, calculate the Pearson product moment correlation coefficient.

Berdasarkan data berikut, kirakan pekali korelasi momen hasil darab Pearson.

x	20	30	40	46	54	60	80	88	92
y	54	60	54	62	68	80	66	80	100

(10 marks)
(10 markah)

QUESTION 4 SOALAN 4

CLO 2
C1

- (a) List **FIVE (5)** types of graphical method to present the data.
Senaraikan LIMA (5) jenis kaedah grafik untuk mempamerkan data.

(5 marks)
(5 markah)

CLO 2
C3

- (b) The data below shows the age distribution on a sample of customers who drink café latte in a coffee shop.

Data di bawah menunjukkan taburan umur ke atas sampel pelanggan yang minum kafe latte di sebuah kedai kopi.

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

Based on the data:

Berdasarkan data di atas:

- i) Calculate:
Kirakan:

a. Range
Julat

(1 marks)
(1 markah)

- b. Number of classes

Bilangan kelas

(2 marks)
(2 markah)

- c. Class width

Lebar kelas

(2 marks)
(2 markah)

- ii) Construct a frequency distribution table comprises of class interval, tally, frequency, class boundaries and midpoint.

Bina jadual taburan kekerapan yang mengandungi selang kelas, gundalan, kekerapan, sempadan kelas dan titik tengah

- a. Based on the data above, draw :

Berdasarkan data di atas, lukiskan

- i. Less Than Ogive

Ogif Kurang Daripada

(10 marks)
(10 markah)

CLO 2
C2

- (c) Differentiate dependent and independent probability.

Bezakan kebarangkalian bersandar dan kebarangkalian tidak bersandar

(5 marks)
(5 markah)

SOALAN TAMAT

FORMULA STATISTIK

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

$$X = \text{Highest Value} - \text{Lowest Value}$$

$$c = \frac{\text{Range}}{k}$$

$$\bar{x} = \frac{\sum fx}{\sum f}$$

$$\tilde{x} = l_m + \left[\frac{\frac{\sum f}{2} - \sum f_m}{f_m} \right] \times C$$

$$x = L_b + \left(\frac{\Delta_1}{\Delta_1 + \Delta_2} \right) \times C$$

$$x = \frac{1}{\sum f} \left(\sum |x - \bar{x}| \right)$$

$$s = \sqrt{\frac{1}{n-1} \left(\sum x^2 - \frac{(\sum x)^2}{n} \right)}$$

$$s = \sqrt{\frac{1}{\sum f - 1} \left[\sum fx^2 - \frac{(\sum fx)^2}{\sum f} \right]}$$

$$x = \frac{s}{\bar{x}} \times 100$$

$$x = \frac{(\bar{x} - \hat{x})}{s}$$

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

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

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

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

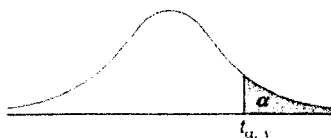
$$a = \frac{\sum y}{n} - b \frac{\sum x}{n}$$

$$y = a + bx$$

$$\bar{x} \pm Z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$$

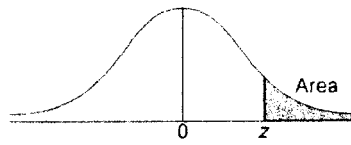
$$\bar{x} \pm t_{\alpha/2, v=n-1} \frac{s}{\sqrt{n}}$$

$$z = \frac{\bar{x} - \mu}{s / \sqrt{n}}$$

Table A5: Critical Values of the t Distributions: $t_{\alpha, v}$ 

Degrees of Freedom (v)	$t_{.400}$	$t_{.300}$	$t_{.200}$	$t_{.100}$	$t_{.050}$	$t_{.025}$	$t_{.010}$	$t_{.005}$
1	0.325	0.727	1.376	3.078	6.314	12.706	31.821	63.657
2	0.289	0.617	1.061	1.886	2.920	4.303	6.965	9.925
3	0.277	0.584	0.978	1.638	2.353	3.182	4.541	5.841
4	0.271	0.569	0.941	1.533	2.132	2.776	3.747	4.604
5	0.267	0.559	0.920	1.476	2.015	2.571	3.365	4.032
6	0.265	0.553	0.906	1.440	1.943	2.447	3.143	3.707
7	0.263	0.549	0.896	1.415	1.895	2.365	2.998	3.499
8	0.262	0.546	0.889	1.397	1.860	2.306	2.896	3.355
9	0.261	0.543	0.883	1.383	1.833	2.262	2.821	3.250
10	0.260	0.542	0.879	1.372	1.812	2.228	2.764	3.169
11	0.260	0.540	0.876	1.363	1.796	2.201	2.718	3.106
12	0.259	0.539	0.873	1.356	1.782	2.179	2.681	3.055
13	0.259	0.537	0.870	1.350	1.771	2.160	2.650	3.012
14	0.258	0.537	0.868	1.345	1.761	2.145	2.624	2.977
15	0.258	0.536	0.866	1.341	1.753	2.131	2.602	2.947
16	0.258	0.535	0.865	1.337	1.746	2.120	2.583	2.921
17	0.257	0.534	0.863	1.333	1.740	2.110	2.567	2.898
18	0.257	0.534	0.862	1.330	1.734	2.101	2.552	2.878
19	0.257	0.533	0.861	1.328	1.729	2.093	2.539	2.861
20	0.257	0.533	0.860	1.325	1.725	2.086	2.528	2.845
21	0.257	0.532	0.859	1.323	1.721	2.080	2.518	2.831
22	0.256	0.532	0.858	1.321	1.717	2.074	2.508	2.819
23	0.256	0.532	0.858	1.319	1.714	2.069	2.500	2.807
24	0.256	0.531	0.857	1.318	1.711	2.064	2.492	2.797
25	0.256	0.531	0.856	1.316	1.708	2.060	2.485	2.787
26	0.256	0.531	0.856	1.315	1.706	2.056	2.479	2.779
27	0.256	0.531	0.855	1.314	1.703	2.052	2.473	2.771
28	0.256	0.530	0.855	1.313	1.701	2.048	2.467	2.763
29	0.256	0.530	0.854	1.311	1.699	2.045	2.462	2.756
∞	0.253	0.524	0.842	1.282	1.645	1.960	2.326	2.576

Table A4: Standard Normal Probability in Right-hand Tail: $P(Z \geq z)$
(Area Under the Normal Curve)

[illegible]