

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN MALAYSIA**

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI JUN 2018

DPB1013 : STATISTICS

TARIKH : 03 NOVEMBER 2018

MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)

Kertas ini mengandungi LAPAN (8) halaman bercetak.

Struktur (4 Soalan)

Dokumen sokongan yang disertakan : Formula and table

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

INSTRUCTION :

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

ARAHAN :

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

QUESTION 1**SOALAN 1**

CLO1
C1

- a) Differentiate primary and secondary data.

Bezakan data primier dan data sekunder.

[5 marks]

[5 markah]

- b) The following data are randomly collected from 15 students in the quiz achievement for statistics module.

Data berikut diambil secara rawak daripada 15 orang pelajar dalam pencapaian kuiz bagi modul statistik.

Student names <i>Nama pelajar</i>	Marks Markah
Mike	66
Merri	72
Molly	84
Anne	60
Belly	62
Reca	58
Robert	70
Ruby	76
Jackson	72
Micheal	84
Janet	90
Jenny	48
Lola	52
Lala	62
Lili	62

CLO1
C1

Using the raw data given, calculate:

Dengan menggunakan data mentah di atas, kirakan:(i) Mean / *Min*[2 marks]
[2 markah](ii) Median / *Median*[2 marks]
[2 markah](iii) Mode / *Mod*[1 marks]
[1 markah]CLO1
C2

c)

Class Interval <i>Selang Kelas</i>	Frequency <i>Kekerapan</i>
69.8 – 77.7	16
77.8 – 85.7	14
85.8 – 93.7	15
93.8 – 101.7	14
101.8 – 109.7	17
109.8 – 117.7	18
117.8 – 125.7	15
125.8 – 133.7	12

Based on the above information, calculate :

Berdasarkan maklumat di atas, kirakan :(i) Mean / *Min*[5 marks]
[5 markah](ii) Median / *Median*[5 marks]
[5 markah](iii) Mode / *Mod*[5 marks]
[5 markah]

QUESTION 2

SOALAN 2

The following table shows the weight distribution (kg) for 150 diploma students in Menara College, Perlis.

Jadual berikut menunjukkan maklumat berat (kg) bagi 150 orang Pelajar Diploma Kolej Menara, Perlis

Weight (kg) <i>Berat (kg)</i>	Frequency <i>Kekerapan</i>
41-45	13
46-50	41
51-55	48
56-60	22
61-65	15
66-70	8
71-75	3

CLO1
C1

You are required to:

Anda dikehendaki:

- (a) Determine the value of Mean Deviation

Tentukan nilai Min Deviasi

[5 marks]

[5 markah]

CLO1
C2

- (b) Calculate Pearson's Coefficient of Skewness 1

Kirakan Sukatan Kepencongan Pearson 1

[15 marks]

[15 markah]

CLO1
C2

- (c) Calculate Pearson's Coefficient of Skewness 2

Kirakan Sukatan Kepencongan Pearson 2

[5 marks]

[5 markah]

SULIT

QUESTION 3

SOALAN 3

CLO1
C1

- (a) The following is a set of data based on a sales report from Marion Ltd showing the relationship between the operation cost per unit and the quantity sold by the company.

Berikut adalah satu set data berdasarkan kepada laporan jualan Marion Berhad yang menunjukkan perhubungan antara kos operasi seunit dan jumlah jualan oleh syarikat berkenaan.

Operational cost per unit (RM) <i>Kos operasi seunit (RM)</i>	Quantity sold ('000) <i>Kuantiti Jualan ('000)</i>
35	43
55	58
41	47
49	46
29	30
44	33
54	38
53	39
33	43

Based on the data given, find the Spearman's Ranking Correlation Coefficient.
Berdasarkan kepada data yang diberikan, tentukan Koefisien Korelasi Pangkat Spearman

[10 marks]

[10 markah]

CLO1
C2

- (b) The following data show the total monthly income and monthly expenditure by 8 families picked randomly from Taman Pauh Indah:

Data berikut menunjukkan jumlah pendapatan bulanan dan jumlah perbelanjaan bulanan bagi 8 buah keluarga yang diambil secara rawak dari Taman Pauh Indah:

Monthly Income (RM'000) <i>Pendapatan Bulanan (RM'000)</i>	Monthly Expenditure (RM'000) <i>Perbelanjaan Bulanan (RM'000)</i>
88.5	55
95	68
110	80
78.5	49
84	54
98.5	64
115	90
120	95

Based on the data above:

Berdasarkan kepada data di atas:

- (i) Calculate a regression equation of monthly expenditure on monthly income using the Least Square Method.

Kirakan persamaan regresi perbelanjaan bulanan ke atas pendapatan bulanan dengan menggunakan Kaedah Kuasa Dua Terkecil.

[12 marks]

[12 markah]

- ii) Determine the estimation of monthly expenditure if the family's monthly income is RM 105,000.

Tentukan jangkaan perbelanjaan bulanan jika pendapatan bulanan keluarga ialah RM 105,000.

[3 marks]

[3 markah]

QUESTION 4

SOALAN 4

- a) The following is the speed record of 50 cars that passed through Butterworth Kulim Expressway (BKE) in a speed trap done by traffic police.

Berikut adalah rekod halaju untuk 50 buah kereta yang melalui Lebuhraya Butterworth Kulim di dalam operasi perangkap had laju yang diambil oleh polis trafik.

88.4	81.9	95.6	94.9	99.8	99.8	85.3	95.4	93.7	89.9
92.4	85.1	92.2	88.1	96.4	84.9	92.2	86.9	81.4	86.2
82.9	94.0	95.7	80.9	96.4	93.2	87.8	95.6	90.6	83.1
93.6	92.2	86.1	89.2	83.9	95.9	79.6	87.2	90.8	88.1
87.2	80.2	89.9	91.0	85.0	93.2	88.2	90.7	82.4	88.6

- (i) Construct a frequency distribution table consisting of class intervals, frequency and class boundaries

Bina jadual taburan kekerapan yang mengandungi selang kelas, kekerapan dan selang kelas.

[10 marks]

[10 markah]

- ii) Draw a frequency polygon.

Lukiskan poligon kekerapan .

[5 marks]

[5 markah]

CLO2
C3

CLO2
C3

- b) Syarikat AAD Agro Farm is facing a dilemma in making a decision to choose a suitable location for a goat field. The company has 2 potential locations, Pasir Mas and Kuala Krai. The possibility for the company to choose Pasir Mas is 30% and Kuala Krai 70%. The possibility for the company to gain profit is at 60% (Pasir Mas) and 40% (Kuala Krai).

Syarikat AAD Agro Farm menghadapi dilema untuk membuat keputusan bagi memilih lokasi yang sesuai untuk membina ladang kambing. Syarikat mempunyai 2 pilihan lokasi iaitu Pasir Mas atau Kuala Krai. Kebangkitan syarikat memilih lokasi Pasir Mas sebanyak 30% dan Kuala Krai sebanyak 70%. Kebarangkalian keuntungan yang akan diperolehi oleh syarikat sekiranya memilih salah satu dari lokasi tersebut adalah sebanyak 60% (Pasir Mas) dan 40% (Kuala Krai).

- i) Draw a Tree Diagram in probability

Lukiskan Gambarajah Pokok kebarangkalian

[7 marks]

[7 markah]

- ii) Calculate the probability of these location will make profits.

Kirakan kebarangkalian kedua-dua lokasi tersebut mendapat keuntungan.

[3 marks]

[3 markah]

SOALAN TAMAT

FORMULA STATISTICS

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

R = Highest Value – Lowest Value

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

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

$$x = L_m + \left[\frac{\frac{\sum f}{2} - F}{fm} \right] \times C$$

$$x = L_b + \left[\frac{(fo - f1)}{(fo - f1) + (fo - f2)} \right] \times C$$

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

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

$$s = \sqrt{s^2}$$

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

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

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

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

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

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

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

$$y = a + bx$$

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

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

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

t Table

cum. prob one-tail two-tails	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.260	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
Z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

Standard Normal Probabilities

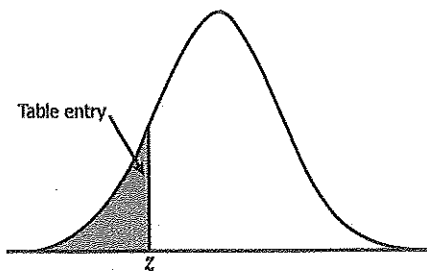


Table entry for z is the area under the standard normal curve to the left of z .

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
-3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
-3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
-3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
-3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
-0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
-0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
-0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
-0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
-0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
-0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
-0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
-0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
-0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
-0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

