POLITEKNIK
MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

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

JABATAN PERDAGANGAN

PENILAIAN ALTERNATIF BERIKUTAN
PELAKSANAAN PERINTAH KAWALAN BERSYARAT

SESI JUN 2020

DPB30063 : STATISTICS

NAMA PENYELARAS KURSUS : PUAN FATIMAH BINTI BAHARI

KAEDAH PENILAIAN   **: PEPERIKSAAN ONLINE**

JENIS PENILAIAN   **: ESEI BERSTRUKTUR (2 SOALAN)**

TARIKH PENILAIAN   **: 31 DISEMBER 2020**

TEMPOH PENILAIAN   **: 1 JAM**

SECTION A: 50 MARKS
BAHAGIAN A: 50 MARKAH

INSTRUCTION:
This section consists of **TWO (2)** structured questions. Answer **ALL** questions.
ARAHAN:
*Bahagian ini mengandungi **DUA (2)** soalan berstruktur. Jawab **SEMUA** soalan.*

QUESTION 1
SOALAN 1

(a) The following data shows the time spent (in hours) by 35 kids to watch television
   per week.

   *Data berikut menunjukkan masa yang diluangkan oleh 35 orang kanak-kanak untuk
   menonton televisyen seminggu.*

10.0	21.0	17.6	12.3	17.5	18.9	14.0
15.3	13.5	34.8	11.5	13.7	9.8	16.5
18.5	14.0	14.4	9.7	25.0	34.8	21.0
14.4	24.5	16.5	32.0	12.6	9.6	11.5
19.5	33.3	35.5	22.5	13.2	12.7	35.7

   Based on the above data, you are required to:

CLO2
C3

   Berdasarkan data di atas, anda dikehendaki untuk:

   i.   Calculate class width.

         Mengira kelebaran kelas.

[2 marks]

[*2 markah*]

CLO2
C3

ii.   Construct a frequency distribution table consisting of class intervals, frequency and class boundaries.

Membina jadual taburan kekerapan yang mengandungi selang kelas, kekerapan dan sempadan kelas.

[8 marks]

[*8 markah*]

(b)   The following data shows the total monthly income and monthly expenditure by 8 families that were picked randomly from Kampung Selamat.

Data berikut menunjukkan jumlah pendapatan bulanan dan jumlah perbelanjaan bulanan bagi 8 buah keluarga yang diambil secara rawak dari Kampung Selamat.

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

CLO2
C3

Based on the data above, calculate the regression equation of monthly expenditure on monthly income using Least Squares Method.

Berdasarkan data di atas, kirakan persamaan regresi perbelanjaan bulanan ke atas pendapatan bulanan dengan menggunakan Kaedah Kuasa Dua Terkecil.

[15 marks]

[15 *markah*]

QUESTION 2
SOALAN 2

(a) The rainfall rate are recorded in various places of five districts in Selangor in a week

are given below.

Kadar air hujan yang turun bagi beberapa tempat di lima daerah di Selangor dalam

seminggu adalah seperti di bawah.

Rainfall (in mm) *Kadar air hujan* *(dalam mm)*	45	50	55	60	65	70	75	80	85	90
Number of places *Bilangan tempat*	5	13	4	9	5	8	3	6	5	2

Based on the above data, you are required to calculate:

Berdasarkan data di atas, anda dikehendaki untuk mengira:

CLO2
C3

i.   Mean

Min

[5 marks]

[*5 markah*]

CLO2
C3

ii   Median

Median

[5 marks]

[*5 markah*]

(b) The following data shows the age distribution of 100 employees at Himalaya Company.

Jadual di bawah menunjukkan taburan umur 100 pekerja di Syarikat Himalaya.

Ages (Year) *Umur (Tahun)*	Number of employees *Bilangan pekerja*
21 – 25	10
26 – 30	35
31 – 35	16
36 – 40	14
41 – 45	12
46 – 50	10
51 - 55	3
Total *Jumlah*	100

Based on the above data, you are required to calculate:

Berdasarkan data di atas, anda dikehendaki untuk mengira:

CLO2
C3

i. Standard deviation   [8 marks]

   Sisihan piawai   [*8 markah*]

CLO2
C3

ii. Pearson's Coefficient of Skewness 1   [7 marks]

   Kepencongan koefision Pearson 1   [*7 markah*]

END OF QUESTION

SOALAN TAMAT

FORMULA STATISTICS

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

$R = Highest\ value - Lowest\ value$

$c = \dfrac{Range}{k}$

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

$\tilde{x} = Lm + \left[\dfrac{\frac{\sum f}{2} - \sum fm^{-1}}{fm}\right] C$

$\hat{x} = Lb + \left[\dfrac{f_0 - f_1}{(f_0 - f_1) + (f_0 - f_2)}\right] C$

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

$MD = \dfrac{1}{\sum f}[\sum f(x - \bar{x})]$

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

$s = \sqrt{s^2}$

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

$PCS\ 1 = \dfrac{\bar{x} - \hat{x}}{s}$

$PCS\ 2 = \dfrac{3(\bar{x} - \tilde{x})}{s}$

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

$\rho = 1 - \dfrac{6\sum d^2}{n(n^2 - 1)}$

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

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

$y = a + bx$