SULIT

POLITEKNIK MALAYSIA

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

JABATAN KEJURUTERAAN MEKANIKAL

PEPERIKSAAN AKHIR

SESI JUN 2018

DJF6102: QUALITY CONTROL

TARIKH : 27 OKTOBER 2018
MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)

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

Struktur (4 soalan)

Dokumen sokongan yang disertakan : Formula and tables book

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

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

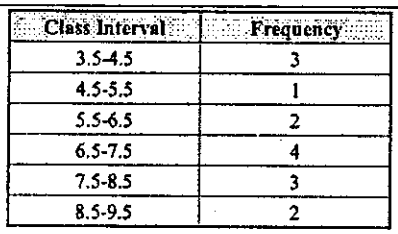
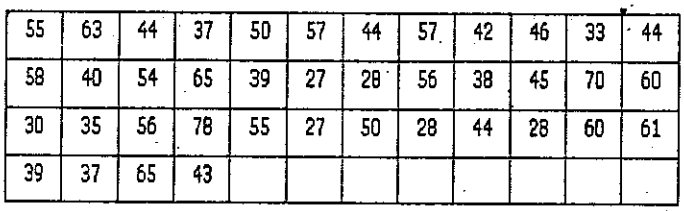
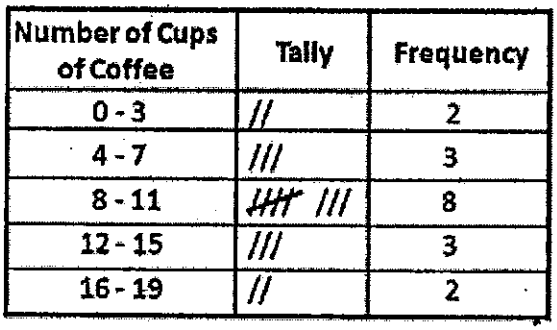
ARAHAN:
*Bahagian ini mengandungi **EMPAT (4)** soalan struktur. Jawab **SEMUA** soalan.*

QUESTION 1
SOALAN 1

CLO1
C2

(a) Classify the following data in Table 1(a) either group or ungroup data.
Klasifikasikan data dalam Jadual 1(a) berikut sama ada data terkumpul atau data tidak terkumpul.

Table 1(a) / *Jadual 1(a)*

Number	Data	Types of Data
1		
2		
3		
4	The shoe sizes of 10 people in a survey are: 8, 9, 9, 7, 10, 6, 7, 8, 9, 7	

Class Interval	Frequency
3.5-4.5	3
4.5-5.5	1
5.5-6.5	2
6.5-7.5	4
7.5-8.5	3
8.5-9.5	2

55	63	44	37	50	57	44	57	42	46	33	44
58	40	54	65	39	27	28	56	38	45	70	60
30	35	56	78	55	27	50	28	44	28	60	61
39	37	65	43								

Number of Cups of Coffee	Tally	Frequency
0 - 3	//	2
4 - 7	///	3
8 - 11	~~////~~ ///	8
12 - 15	///	3
16 - 19	//	2

[4 marks]
[*4 markah*]

CLO1
C3

(c) Illustrate $\bar{x}$ and s chart for the following data in Table 1(c).

Gambarkan carta $\bar{x}$ and s bagi data yang berikut dalam *Jadual 1(c).*

Table 1(c)/*Jadual 1(c)*

Sample Number	$\bar{x}$-chart				s-chart			
	$\bar{x}$	CL	UCL	LCL	s	CL	UCL	LCL
1	91	97.72	112.62	82.83	14.47	7.62	19.56	0
2	95.10				5.08			
3	92				5.9			
4	107.83				13.94			
5	101.13				5.74			
6	102.47				4.42			
6	99.83				5.46			
8	94.2				10.93			
9	92				2.71			
10	100.83				7.57			

[7 marks]
[*7 markah*]

CLO1
C4

(d) Interpret the following data in Table 1(d) by calculating the Upper Control Limit (UCL), Lower Control Limit (LCL) and Center Line (CL). Sample size, n = 5.

Tafsirkan data bagi Jadual 1(d) dengan mengira nilai Had Kawalan atas, Had Kawalan bawah dan garisan tengah. Saiz sampel, n=5.

Table 1(d)/*Jadual 1(d)*

$\bar{x}$	R
10.5	2.1
10.4	1.3
10.0	0.4
10.5	1.2
9.8	2.3

[7 marks]
[*7 markah*]

CLO1
C2

(c) Explain the difference between Assignable Cause and Chance Cause. State **ONE (1)** example for each.

*Terangkan perbezaan antara variasi rawak dan variasi bersebab. Nyatakan **SATU (1)** contoh bagi setiap satu.*

[6 marks]
[*6 markah*]

CLO1
C3

(d) Inspection results of defect item on the shipments to the customer for 10 consecutive days are given in the Table 2(d). Draw np-chart together with the Upper Control Limit (UCL), Lower control Limit (LCL) and Center Line (CL) on the plotted chart.

Keputusan pemeriksaan bagi kerosakan produk yang berlaku semasa diposkan kepada pelanggan dalam 10 hari yang berturut-turut adalah seperti dalam Jadual 2(d). Lukiskan carta-np yang menunjukkan Had Kawalan atas, Had Kawalan bawah dan garisan tengah dalam carta yang dibina.

[10 marks]
[*10 markah*]

Table 2(d) /*Jadual 2(d)*

Lot Number	Sample Size	Non-conforming
1	300	5
2	300	7
3	300	4
4	300	6
5	300	4
6	300	3
7	300	3
8	300	1
9	300	5
10	300	2

CLO2
C3

(d) At the beginning of 2008, XYZ Company initiated a quality-improvement program. By the end of the year, the following financial data were collected for the preceding and current years in Table 3(d) below:

Pada awal 2008, Syarikat XYZ melaksanakan program menambahbaikan kualiti. Pada akhir tahun, berikut adalah data kewangan tahun semasa dan tahun sebelumnya yang dikumpul dalam Jadual 3(d) berikut:

Table 3(d) / *Jadual 3(d)*

Items	2007	2008
Sales	RM10 000 000	RM10 000 000
Scrap	RM400 000	RM300 000
Rework	RM600 000	RM400 000
Product inspection	RM100 000	RM125 000
Product warranty	RM800 000	RM600 000
Quality training	RM40 000	RM80 000
Materials inspection	RM60 000	RM40 000

i. Translate all the items based on quality costs: prevention, appraisal, internal failure, or external failure.
Tentukan semua item berdasarkan kepada kos kuailiti : pencegahan, taksiran, kegagalan dalaman dan kegagalan luaran.

ii. Calculate the total appraisal cost for 2007 and internal failure cost for 2008.
Kirakan jumlah kos taksiran 2007 dan kos kegagalan dalaman 2008.

[7 marks]
[*7 markah*]

CLO2
C4

(b) Hotel Sentosa obtained a list of complaints from their customers as shown in Table 4 (b) below. Develop a relevant quality control technique diagram
Hotel Sentosa menerima aduan daripada pelanggannya seperti Jadual 4 (b) di bawah. Binakan satu teknik kawalan kualiti yang bersesuaian.

Table 4(b) / *Jadual 4(b)*

Complaint Type	No. of Complaint
Delay in registration	43
Room Cleaning	34
Food Quality	17
Delay in Room Service	9
Staff Attitude	6
Room Interiors	6
Air Conditioning	3
Concierge	2
Mini bar	2

[5 marks]
[*5 markah*]

CLO2
C3

(c) Interprete **EIGHT (8)** benefits of implementation ISO 9001 in educational institutions.
*Tafsirkan **LAPAN (8)** kelebihan ISO 9001 dalam institusi pendidikan.*

[8 marks]
[*8 markah*]

CLO2
C4

(d) Analyze the differences between ISO 9001 and ISO 9002.
Analisiskan perbezaan antara ISO 9001 dan ISO 9002.

[5 marks]
[*5 markah*]

SOALAN TAMAT