

SULIT



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

JABATAN KEJURUTERAAN AWAM

PENILAIAN ALTERNATIF

SESI 1: 2021 / 2022

BCF5173 : INTRODUCTION TO VALUE MANAGEMENT

NAMA PENYELARAS KURSUS: SR DR.FADHILAH BINTI MOHD NOR

KAEDAH PENILAIAN : PEPERIKSAAN ATAS TALIAN

JENIS PENILAIAN : SOALAN BERSTRUKTUR (3 SOALAN)

TARIKH PENILAIAN : 3 FEBRUARI 2022

TEMPOH PENILAIAN : 2 JAM

LARANGAN TERHADAP PLAGIARISM (AKTA 174)

**PELAJAR TIDAK BOLEH MEMPLAGIAT APA-APA IDEA, PENULISAN, DATA
ATAU CIPTAAN ORANG LAIN. PLAGIAT ADALAH SALAH SATU
PENYELEWENGAN AKADEMIK. SEKIRANYA PELAJAR DIBUKTIKAN
MELAKUKAN PLAGIARISM, PENILAIAN BAGI KURSUS BERKENAAN AKAN
DIMANSUHKAN DAN DIBERI GRED F DENGAN NILAI MATA 0.00.**

**(RUJUK BUKU ARAHAN-ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN (Sarjana Muda) EDISI 2,
2020, KLAUSA 15&16)**

SECTION A: 75 MARKS**BAHAGIAN A: 75 MARKAH****INSTRUCTION:**

This section consists of **THREE (3)** structured questions. Answer all questions.

ARAHAN :

Bahagian ini mengandungi TIGA (3) soalan berstruktur. Jawab semua soalan.

QUESTION 1**SOALAN 1**CLO1
C2

a) Explain the following terms based on the Value Management Concept.
Terangkan istilah-istilah dibawah berdasarkan konsep Pengurusan Nilai:

- (i) FAST diagram
Rekabentuk FAST
- (ii) Job Plan
Rancangan Kerja

[5 marks]

[5 markah]

CLO1
C4

b) One of the reasons for choosing Value Management(VM) is because it promotes system thinking. Explain **FIVE (5)** reasons why they are choosing Value Management.

Salah satu sebab mengapa memilih Pengurusan Nilai adalah Pengurusan Nilai menggalakkan sistem pemikiran. Terangkan LIMA (5) alasan mengapa mereka memilih Pengurusan Nilai.

[10 marks]

[10markah]

CLO1
C4

c) A 40- Hour Value Management (VM) workshop greatly depends on the formal workshop where the workshop team will adopt the structured VM job plan. Throughout the process every team member has to use his good human relationship so that the workshop will be conducive and producing positive results. Each VM Team has their responsibility checklists pertaining to construction projects. Explain in detail what are the responsibilities for design team during the 40-Hour VM workshop.

Bengkel Pengurusan Nilai 40- Jam (VM) adalah bergantung pada bengkel formal di mana pasukan bengkel akan menggunakan rancangan kerja VM yang tersusun. Sepanjang proses itu, setiap ahli pasukan harus memastikan hubungan baik sesama manusia agar bengkel ini akan kondusif dan memberikan hasil yang positif. Setiap pasukan VM

mempunyai senarai semak yang berkaitan dengan projek pembinaan. Tentukan apakah tanggungjawab pasukan reka bentuk semasa bengkel VM 40 Jam.

[10 marks]

[10 markah]

QUESTION 2**SOALAN 2**

CLO1
C3

a) Basic function; secondary function; required secondary function and unnecessary function have their own responsibilities in the FAST diagramme. Explain all the functions based on their criteria.

Fungsi asas; fungsi sekunder; fungsi sekunder yang diperlukan dan fungsi yang tidak diperlukan mempunyai tanggungjawab masing-masing didalam rajah FAST. Terangkan semua fungsi tersebut berdasarkan kriteria masing-masing.

[5 marks]

[5 markah]

CLO1
C4

b) Based on the Weighted Evaluation Matrix (figure 1), construct the decision to achieve the Value Index by referring to those criteria and life cycle cost given. Use the evaluation matrix form supplied to analyse.

Berdasarkan Matriks Analisis Pemberat (Weighted Evaluation Matrix) di figure 1, Binakan keputusan sehingga mencapai Indeks Nilai (Value Index) berdasarkan beberapa kriteria dan kos kitar hayat yang telah diberikan. Gunakan borang matrik penilaian yang dibekalkan untuk membuat analisa.

Project: **Proposed renovation works for a hotel training room**
 Element: **Floor finishes**

Criteria (Non-Monetary)		Alternatives & Score		
		Ceramic	Carpet	Marble
A.	Safety	4	5	3
B.	Hygiene	5	3	4
C.	Ease of O&M	4	3	4
D.	Aesthetics	3	5	5
E.	Sound absorption	2	5	3

LCC	70	80	100

	A	B	C	D	E
A		0	1	1	1
B	2		1	1	1
C	1	0		1	1
D	1	1	1		1
E	0	0	1	0	

Note: Score rate
 (5) Excellent, (4) Very Good, (3) Good, (2) Fair, (1) Poor

FIGURE 1/RAJAH 1

[10 marks]
 [10markah]

CLO1
 C4

c) There are three types of Value Management namely Value Planning, Value Engineering and Value Analysis. Explain and differentiate each of them.

Terdapat tiga jenis Pengurusan Nilai iaitu Perancangan Nilai, Kejuruteraan Nilai dan Analisis Nilai. Terangkan dan bezakan setiap jenis yang tersebut.

[10 marks]
 [10markah]

QUESTION 3**SOALAN 3**CLO
1




a) There are four concepts of Life Cycle Cost (LCC). Explain the concept of Life Cycle Cost(LCC) .

Kos Kitaran Hayat mempunyai beberapa konsep. Terangkan konsep Kos Kitaran Hayat tersebut.

[5 marks]

[5 markah]

Table 1: Various Types of Bulb With Specifications*Jadual 1: Pelbagai Jenis Mentol Beserta Spesifikasi*CLO1
C4

			
Type	Incandescent	CFL	LED
Lumens	1300		
Lifetime (Hour)	1,000	8,000	50,000
Lifetime (Year)	1	7	60
Electricity Used (kW)	3,285 kWh/year (Very high)	767 kWh/year (Low)	329 kWh/year (Very Low)
Durability	No – glass or filament break easily	No – glass break easily	Yes – LEDs are highly shock resistance
Watt	100W	20W	18W
Unit Price	RM8.00	RM26.00	RM65.00
Electricity Charges	RM0.25/kWh		

b) Table 1 shows basic information regarding three different types of bulb. Based on calculation, 7000 lumens is required to illuminate the given area. Utilising on your knowledge in life cycle costing, compare the suitability of the three types of bulb in Table 1 for the purpose of this project. The electricity tariff is expected to increase by 30% during year 6 of your projection. Provide your professional suggestion on which type of bulb should be used. Your calculation should be based on ten years period.

Jadual 1 memaparkan maklumat asas mengenai tiga jenis mentol. Berdasarkan pengiraan, pencahayaan bagi ruang yang diberi ialah 7000 lumens. Menggunakan pengetahuan anda dalam kos kitaran hayat, bandingkan kesesuaian ketiga-tiga jenis mentol di Jadual 1 untuk tujuan projek ini. Tarif elektrik dijangka akan meningkat sebanyak 30% pada tahun ke 6 unjuran anda.

Kemukakan pandangan profesional anda untuk jenis mentol yang patut digunakan. Pengiraan anda perlu berdasarkan tempoh 10 tahun..

[10 marks]

[10 markah]

Table 2: Types of Plant X
Jadual 1: Jenis-Jenis Loji X

Plant X	Type A	Type B	Type C
Capital Expenditure (RM)	15,000.00	20,000.00	10,000.00
Monthly Maintenance (RM)	2,000.00	3,500.00	1,900.00
Annual Parts Replacement (RM)	10,000.00	7,000.00	10,000.00
Lifespan (years)	50 years	70 years	30 years
Power Source	Petrol	Electricity	Diesel
Fuel/Energy Consumption	2 litre / hour	5 kW / hour	2 litre / hour
Fuel/Energy Price	RM2.00 / litre	RM0.60 / kWh	RM1.95 / litre
Plant usage per day	12 hours	13 hours	14 hours
Depreciation Value (From Capital Expenditure)	5% annually	10% annually	10% annually

CLO1
C4

c) Owner of the facility where you are working at is planning to replace the existing Plant X this year. There are three options available for the Plant X as shown in Table 2. The next replacement of Plant X is expected 10 years from now. Applying your knowledge on life cycle costing, analyse the given information and advice the owner which type of Plant X should be procured.

Pemilik fasiliti di tempat anda bekerja merancang untuk membuat pengantian Loji X sedia ada pada tahun ini. Terdapat tiga pilihan Loji X seperti yang ditunjukkan di Jadual 2. Pengantian seterusnya Loji X ini dijangka 10 tahun dari sekarang. Menggunakan pengetahuan anda dalam kos kitaran hayat, lakukan analisis terhadap maklumat yang diberi dan nasihatkan pemilik fasiliti Loji X yang patut dipilih.

[10 marks]

[10 markah]

SOALAN TAMAT