



SULIT

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA
PEPERIKSAAN SEMESTER II
TEST- 1
SESI 2010/2011**

KOD MATA PELAJARAN : BMFP 3582
**MATA PELAJARAN : EKONOMI PEMBUATAN
(MANUFACTURING ECONOMY)**
PENYELARAS : EN. H HAERY IP
KURSUS : BMFU
MASA : 2 JAM
TARIKH : 31 MARCH 2011
NAME :
**MATRIX No :

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Arahan kepada calon:

- 1. Kertas soalan ini mengandungi 8 Soalan.**
- 2. Setiap soalan hendaklah dijawab pada muka surat yang baru.**

**KERTAS SOALAN INI TERDIRI DARIPADA LAPAN (8) MUKA SURAT SAHAJA
(TERMASUK MUKA SURAT HADAPAN)**

SULIT

QUESTION 1.

Mr. Tong Poho as a Plant Manager wants you as his engineer to apply the method of charging direct material into the production system. The following information is the receipts and issues of material into stock to production during January.

Date in January	Quantity receipts (units)	Price receipts (RM/unit)	Value receipts (RM)	Quantity issued (units)
1 st	75	50	3750	
10 th	125	55	6875	
15 th				125
20 th	75	60	4500	
30 st				150

By using FIFO (First In, First Out) method of pricing the issue of goods to production, determine as following:

- a) The issue prices at which goods will be charged to production;

[5 Marks]

- b) The closing stock value at 31 January 2001

[5 Marks]

ANSWER:

The issue prices at which goods will be charged to production

Date issued	Calculation	Value of Issued (RM)
15 th	75 units x RM 50 = RM 3750 50 units x RM 55 = RM 2750	6500
31 st	75 units x RM 55 = RM 4125 75 units x RM 60 = RM 4500	8625

- a) Therefore, the issue prices for goods charged to production are RM 6500 for 15 January and RM 8625 for 31 January respectively.

- b) The closing stock value at 31 January 2001 is 0 units x RM60 = RM 0

Check:

Total receipts (3750+6875+4500)	15125
Total issues (6500 + 8625)	<u>15125</u>
Closing Stock	<u>00</u>

By using LIFO (Last In, First Out) method of pricing the issue of goods to production, determine the following:

a) The issue prices at which goods will be charged to production; [5 Marks]

b) The closing stock value at 31 January 2001 [5 Marks]

ANSWER:

The issue prices at which goods will be charged to production

Date issued	Calculation	Value of Issued (RM)
15 th	125 units x RM 55 = RM 6875	6875
31 th	75 units x RM 60 = RM 4500 75 units x RM 50 = RM 3750	8250

a) Therefore, the issue prices for goods charged to production are RM 6875 for 15 January and RM 8250 for 31 January respectively.

b) The closing stock value at 31 January 2001 is 0 units x RM60 = RM 0

Check:

Total receipts (3750+6875+4500)	15125
Total issues (6875 + 8250)	<u>15125</u>
Closing Stock	<u>00</u>

QUESTION 2.

QocarQacir Sdn Bhd is computing indirect rates for the production of 'PeeSunkBaqar' products. The following information is obtained from last year's budget for the three machines used in production.

Cost Source	Allocation Basis	Estimated Activity Level
Machine-1	Direct Labor Cost	RM 50,000
Machine-2	Direct Labor Hours	1000 Hours
Machine-3	Direct material Cost	RM 100,000

Determine rates for each machine if the estimated annual indirect cost budget is RM 25,000 per machine

[7.5 Marks]

ANSWER:

Machine 1 Rate = Indirect Budget/ Direct Labor Cost = 25,000 / 50,000 = **RM 0.50** per direct labor
[2.5 Marks]

Machine 2 Rate = Indirect Budget/ Direct Labor Hours = 25,000 / 1000 = **RM 25** direct labor
[2.5 Marks]

Machine 3 Rate = Indirect Budget/ Material Cost = 25,000 / 100,000 = **RM 0.25** per direct material
[2.5 Marks]

QUESTION 3.

Suppose that QocarQacir Sdn Bhd have been produced 2,000 units of 'PeeSunkBaqar' product during the period where 5,000 direct labor hours have been worked at a rate of RM 25 per direct labor hour and standard rate per direct labor hour is RM 25.50

- a) Determine labor rate variance.
[5 Marks]
- b) Based on the answer of no. (a) , do the Actual rate is favorable rather Standard rate?
[2.5 Marks]
- c) If the standard time allowed for a unit of finished product is 1.5 hours, determine the direct labor efficiency variance or direct labor quantity variance
[5 Marks]
- d) Based on the answer of no. (c), do the Actual hours rate is favorable rather Standard hours allowed?
[2.5 Marks]

ANSWER:

- a) Labor rate variance :
= (Actual hours worked × Actual rate) – (Actual hours worked × Standard rate)
= (5,000 × 25) – (5,000 × RM 25.50) = 125,000 – 127,500 = - **RM 2,500** (Favorable)
- b) Yes. Calculation shows a favorable labor rate variance because **actual rate paid to workers is less than standard rate.**
- c) 2000 actual production × 1.50 standard hour allowed per unit = **3000**

Labor efficiency variance
= (Actual hours worked × Standard rate) – (Standard hours allowed × Standard rate)
= (5,000 × RM 25.5) – (3,000 × RM 25.5) = RM 127,500 – RM 76,500 = RM 51,000 (Unfavorable)
- d) No. Processing of 2,000 units required more time than what was is allowed by standards. The result is an unfavorable labor efficiency variance.

QUESTION 4.

In 2000, QocarQacir Sdn. Bhd. and FoundTangFoundTing Ltd. merged to form a giant telecommunications corporation named Tralala Communications. As expected, some equipment incompatibilities had to be rectified, especially for long distance and international wireless and video services. One item had two suppliers which is a U.S firm (A) and an Asian firm (B). Approximately 3000 units of this equipment were needed. Estimates for vendors A and B are given for each unit.

	A	B
Initial Cost	8,000	13,000
Annual Cost	3,500	1,600
Salvage value	0	2,000
Life, years	10	5

Determine which vendor should be selected if the MARR is 12% per year.

[10 Marks]

ANSWER :

$$AWA = -8000(A/P,i,10) - 3500 = -8000 (0.1770) - 3500 = -4916$$

$$AWB = -13000 (A/P,i,5) -1600 + 2000(A/F,i,5) = -13000 (0.2774) -1600 + 2000(0.1574) = - 4891.4$$

Since the annual rate for A is < than B, the vendor B is selected

QUESTION 5.

An investor asks the consulting firm to analyze what he have to do with the alternative investing available as in Table below. The interest (MAR) is 12% and the period is 20 year.

	Alternative	Total Investing	Uniform Net Annual benefit	Salvage/Selling value (20 year)
A	Do Nothing	RM 0	RM 0	RM 0
B	Vegetable Market	RM 50,000	RM 5,100	RM 30,000
C	Gas Station	RM 95,000	RM 10,500	RM 30,000
D	Small Motel	RM 35,000	RM 36,000	RM 150,000

Determine what the investor should choose by using the net present worth calculation.

[15 Marks]

ANSWER:

Alternative A: do nothing, NPW = 0

Alternative B: Vegetable Market

$$\begin{aligned} NPW &= -50,000 + 5,100 (P/A,12\%,20) + 30000 (P/F,12\%,20) \\ &= -50,000 + 5,100 (7.469) + 30000(0.1037) = - RM 8,797.1 \end{aligned}$$

Alternative C: Gas Station

$$\begin{aligned} \text{NPW} &= -95000 + 10500 (P/A, 12\%, 20) + 30000 (P/F, 12\%, 20) \\ &= -95,000 + 10500 (7.469) + 30000(0.1037) = - \text{RM } 13,464.5 \end{aligned}$$

Alternative D: Small Motel

$$\begin{aligned} \text{NPW} &= -35,000 + 36000 (P/A, 12\%, 20) + 150000 (P/F, 12\%, 20) \\ &= -35,000 + 36000 (7.469) + 150000(0.1037) = \text{RM } 249,439 \end{aligned}$$

QUESTION 6.

The incomes of Totet-totet Toy enterprise in 2010 is as following table.

Jan	Feb	Marc	April	May	June	July	August	Sep	Octo	Nov	Des
8,250	8,250	8,250	8,250	12,600	12,600	12,600	9,750	9,750	14,000	14,000	14,500

If the value of money is 12%,

- a) What is the equivalent value for present worth?

[10 Marks]

- b) What is the equivalent uniform annual benefit for the 12 month period or 1 year ?

[2.5 Marks]

ANSWER:

$$\begin{aligned} \text{a) } \text{PW} &= 8,250 + 8,250 (P/A, 12\%, 3) + 12,600 (P/A, 12\%, 3) (P/F, 12\%, 3) + 9,750 (P/A, 12\%, 2) \\ &\quad (P/F, 12\%, 6) + 14,000 (P/A, 12\%, 2) (P/F, 12\%, 8) + 14,500 (P/F, 12\%, 11) \\ &= 8,250 + 8,250 (2.402) + 12,000 (2.402) (0.7118) + 9,750 (1.690) (0.5066) + 14,000 \\ &\quad (1.690)(0.4039) + 14,500(0.2875) = \text{RM } 71,681.79 \end{aligned}$$

$$\begin{aligned} \text{b) } \text{EUAB} &= 71,681.79 (A/P, 12\%, 12) = 71,881.79 (0.1614) \\ &= \text{RM } 11,569.44 \end{aligned}$$

QUESTION 7.

The following costs are estimated for two equal service tomato-peeling machines to be evaluated by a canning plant manager.

	<u>Machine A</u>	<u>Machine B</u>
First Cost, \$	26,000	36,000
Annual maintenance cost, \$	800	300
Annual labor cost, \$	11,000	7,000
Extra annual income taxes, \$	-	2,600
Salvage value, \$	2,000	3,000
Life, years	6	10

If the minimum required rate of return is 12% per year, decide which machine to select.

[10 Marks]

ANSWER:

Machine A:

$$\begin{aligned} AW_a &= -26,000(A/P, 12\%, 6) + 2,000 (A/F, 12\%, 6) - (1100 + 800) \\ &= -26,000*(0.2432) + 2,000*(0.1232) - 11,800 \\ &= - RM 17,876.8 \end{aligned}$$

Machine B:

$$\begin{aligned} AW_b &= -36,000(A/P, 12\%, 10) + 3,000 (A/F, 12\%, 10) - (300 + 7000 + 2600) \\ &= -36,000*(0.1770) + 3,000*(0.0570) - 9,900 \\ &= - RM 16,101 \end{aligned}$$

Since $AW_b > AW_a$, then we select machine B

QUESTION 8.

The operating cash flow is designed to measure the company's ability to generate cash from day-to-day operations as it provides goods and service to customers, the investing segment, and the financial segment. The formulas bellow show regarding CashFlow, Profit, Sales, Income, and Taxes.

- $CashFlow_{Total} = CashFlow_{Operating-Activities} + CashFlow_{Investing-Activities} + CashFlow_{Financial-Activities}$
- $CashFlow_{Operating-Activities} = Profit_{After-Tax} + Depreciation + Working\ Capital\ Changes$
- $Profit_{After-Tax} = Sales + Other\ Income - Expenses - Taxes$
- $CashFlow_{Investing-Activities} = Asset\ sales - Capital\ Investment - Acquisitions + Investing\ Gain\ and\ Loses$
- $CashFlow_{Financial-Activities} = Dividends\ to\ shareholder - Treasury\ stock\ purchases + Change\ in\ debt$
- $CashFlow_{Year-End} = CashFlow_{Start-of-the-year} + CashFlow_{Total}$

Due to $Profit_{After-Tax} = Profit - Taxes$,

- a) Evaluate how the company strategy can reduce the Taxes based on above formula. (Derive the formula to show your answer).

[10 Marks]

- b) Which of the components of Profit and Expenses that should be increased and decreased?

Increased	Decreased
?	?
?	?
?	?
?	?

[10 Marks]

ANSWER:

Taxes \sim Profit_{Before-Tax} (the amount of Taxes is influenced by the amount of Profit taken)

$$\begin{aligned}\text{Profit}_{\text{Before-Tax}} &= \text{Total Income} - \text{Total Expenses.} \\ &= \text{Sales} + \text{Other Income} - \text{Expenses} \\ &\quad + \text{Asset} + \text{Investing Gain \& Loses} - \text{Capital Investment} \\ &\quad + \text{Dividends} + \text{Change in Debt} - \text{Treasury Stock Purchase} - \text{CashFlow}_{\text{Operating-Activities}}\end{aligned}$$

To reduce the Taxes, basically the component of (-) negative (spending/consumption or Expenses) should be increased, while the component of (+) positive (receiving or Income) should be decreased.

Increased	Decreased
Expense	Sales
Capital Investment	Other Income
Treasury Stock Purchase	Asset
CashFlow _{Operating-Activities}	Investing Gain & Loses
	Dividends
	Change in debt