Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019

COURSE NAME	:	PRODUCTION AND OPERATION COSTING
COURSE CODE	:	BPC 32603
PROGRAMME CODE	:	BPB / BPP
EXAMINATION DATE	:	JUNE / JULY 2019
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS.

THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

Q1 Anggun Jaya is a manufacturer of organic based "Durian Belanda" juice. The company is currently operating at almost 100% capacity, with production of 160,000 bottles of juice per year. **Table Q1** below, shows the product prices, product costs and operational expense incurred in year 2018.

Table Q1: Cost information

Item	RM	RM
Sales price per unit (2 litre)		85
Variable costs per unit :		
Direct materials	35	
Direct labour	13	
Factory overhead	16	
Total Variable Cost per unit		64
Fixed costs per year		
Factory overhead	150,000	
Sales and administration	280,000	
Total Fixed Costs		430,000

The management of Anggun Jaya has decided to maintain the selling price per unit of the organic juice product in 2019 and are considering two alternatives that will permit an increase in unit sales and operation capacity in 2019. However each alternative will have different effects on the costs.

Alternative 1 : A plant expansion that will increase the fixed cost factory overhead per year by 15 percent and decrease variable cost per unit by RM3.

Alternative 2 : Changing the production process that will increase variable cost per unit by RM2 and decrease fixed cost factory overhead per year by 5 percent.

(a) (i) Calculate the contribution margin for both alternatives.

(8 marks)

(ii) Compute the amount of sales in units for 2019 under each of the alternatives if profit of RM5,000,000 is to be realized.

(6 marks)

(iii) Recommend the best course of action that the management of Anggun Jaya should take based on the answers of **Q1(a)(ii)**.

(3 marks)

(b) Define the term 'break-even point'.

(2 marks)

Q2 Cozy Pet House Company makes two pet carriers, the Kittypad and the Poochenel. They are both made of plastic with metal doors, but the Kittypad is smaller. Information for the two products for the month of April is given in **Table Q2(a)** and **Table Q2(b)**:

Table Q2(a): Direct Material Cost information

Item	Units
Direct material cost	
Plastics	RM5 per kg
Metal	RM4 per kg
Beginning inventory (direct materials)	
Plastics	230 kg
Metal	70 kg
Target ending inventory (direct materials)	
Plastics	400 kg
Metal	65 kg
Cost of beginning inventory (direct materials)	
Plastics	RM874
Metal	RM224
Quantity of material per unit	
Plastics (Kittypad)	3 kg
Metal(Kittypad)	0.5kg
Plastics (Poochenel)	5kg
Metal (Poochenel)	1kg

Table Q2(b): Sales and Finished Goods Inventory Information

Item	Kittypad	Poochenel
Expected Sales in unit	580	240
Selling price per unit	RM190	RM275
Target ending inventory	45 units	25 units
Finished goods to be produced	600 units	225 units

(a) Prepare the direct material purchase budget showing the physical units and costs in the budget table.

(15 marks)

(b) One of the most valuable benefits of budgeting is that it helps managers gather information for improving future performance.

Discuss with an example.

(4 marks)

Q3 **Table Q3** shows data taken from the records of Salamah Manufacturing Company for the fiscal year ended 31 December, 2018.

Table Q3: Cost Information of Salamah Manufacturing Company

Item	RM	Item	RM
Sales revenue	846, 000	Administrative expenses	17,200
Plant manager's salary	46, 800	Factor utilities expenses	6,200
Factory property taxes	9,400	Indirect labour	18,200
Factory repairs	1,200	Selling expenses	2,000
Raw materials inventory, 1/1/2018	63,400	Direct labour	225,000
Raw materials inventory, 31/12/2018	58,400	Rent on manufacturing plant	19,800
Finished good inventory, 1/1/2018	139,600	Raw materials purchases	124,200
Finished good inventory, 31/12/2018	160,000	Depreciation plant vehicles	16,600
WIP inventory, 1/1/2018	16,200	Factory insurance	3,200
WIP inventory, 31/12/2018	15,000		

(a) Prepare a cost of goods manufactured schedule for Salamah Manufacturing Company for the year ended December 31, 2018.

(14 marks)

(b) Describe with an example the term 'manufacturing overhead'.

(3 marks)

Q4 (a) On May 1, 2017, Gloria Company began the manufacture of a new paging machine known as Model X. The company installed a standard costing system to account manufacturing costs. The standard costs for a unit of Model X are shown in **Table Q4(a)** as follow:

Table Q4(a): Standard costs per unit of Model X

Item	RM
Direct materials (3 lb. at RM5 per lb.)	15.00
Direct manufacturing labor (1/2 hour at RM20 per hour)	10.00
Manufacturing overhead (75% of direct manufacturing labor costs)	7.50
Total	**32.50**

The following data, as shown in **Table Q4(b),** were obtained from Gloria's records for the month of May:

Table Q4(b): Direct materials and manufacturing labor variances

Item	RM
Revenues	125,000
Accounts payable (for May's purchases of direct materials)	68,250
Direct materials price variance	3,250
Direct materials efficiency variance	2,500
Direct manufacturing labor price variance	1,900
Direct manufacturing labor efficiency variance	2,000

Additional information:

- Actual production in May was 4,000 units of Model X, and actual sales in May were 2,500 units.
- The amount shown for direct materials price variance applies to materials purchased during May.
- There was no beginning inventory of materials on May 1, 2017.

Compute each of the following items for the month of May:

(i) Actual direct manufacturing labor-hours allowed for actual output produced.
(3 marks)

(ii) Actual direct manufacturing labor-hours worked.
(3 marks)

(iii) Actual direct manufacturing labor wage rate.
(3 marks)

(iv) Actual quantity of direct materials used (in pounds).
(3 marks)

(v) Actual quantity of direct materials purchased (in pounds).
(3 marks)

(vi) Actual direct materials price per pound.
(3 marks)

(b) Discuss **TWO (2)** potential problems with standard costs.
(4 marks)

Q5 Alpha Z Company must decide whether to make or buy some of its components from Ideaz Corporation. The cost of producing 50,000 electrical connectors for its printers is RM110,000, broken down as **Table Q5(a)** :

Table Q5(a): Costs for a producing 50,000 electrical connectors

Item	RM
Direct materials	60,000
Direct labor	30,000
Variable overhead	12,000
Fixed Overhead	8,000

Instead of making the electrical connectors at an average cost per unit of RM2.20, the company has an opportunity to buy the connectors at RM2.30 per unit.

If the connectors are purchased, all variable costs and half of the fixed costs will be eliminated.

(a) (i) Prepare an incremental analysis showing whether the company should make or buy the electrical components.

(9 marks)

(ii) Explain the results.

(3 marks)

(b) Assuming that by releasing the productive capacity will generate additional income of RM25,000 :

(i) Compute the new analysis.

(5 marks)

(ii) Discuss the results.

(3 marks)

(c) Indicate the relevant costs in a make and buy decision.

(3 marks)

- END OF QUESTIONS –