



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2014/2015**

COURSE NAME : PRODUCTION AND OPERATIONS  
MANAGEMENT

COURSE CODE : BPB31103

PROGRAMME : 2BPA

EXAMINATION DATE : DECEMBER 2014/JANUARY 2015

DURATION : 3 HOURS

INSTRUCTION : ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

- Q1** (a) Discuss the benefits and challenges associated with the implementation of an MRP system. (10 marks)
- (b) The demand for subcomponent P is 100 units in week 7. Each unit of component C requires 1 unit of T and 2 unit of U. Each unit of T requires 1 unit of V, 2 units of W, and 1 unit of X. Finally, each unit of U requires 2 units of Y and 3 units of Z. One firm manufactures all items. It takes 3 weeks to make P, 1 week to make T 2 weeks to make U, 2 weeks to make V, 3 weeks to make W, 1 week to make X, 2 weeks to Y and 1 week to make Z.
- (i) Construct a product structure. (5 marks)
- (ii) Prepare a time-phased product structure. (5 marks)
- (iii) Construct a gross material requirements plan. (5 marks)
- Q2** (a) Explain why productivity is difficult to improve in the service sector. (5 marks)
- (b) Compare the activities within operations management across two different sectors. (10 marks)
- (c) Explain **FIVE (5)** role and responsibilities of an operations manager within an organization. (10 marks)
- Q3** (a) (i) Define the **SEVEN (7)** wastes of Lean Manufacturing System. (7 marks)
- (ii) Explain the principles of the Toyota Production System. (8 marks)
- (b) Richard Ng has a repetitive manufacturing company producing bicycles. Use the data tabulated in **Table Q3(b)** to prepare for a reduced lot size. The company uses a work year of 305 days.

**Table Q3(b)**

1.	Annual demand for bicycles	30,500
2.	Daily demand	100
3.	Daily production (8 hours)	800
4.	Desired lot size (2 hours of production)	200
5.	Holding cost per unit per year	RM10

- (i) Calculate the setup cost based on the desired lot size. (5 marks)
- (ii) Calculate the setup time based on RM40 per hour of setup labour. (5 marks)

**Q4** (a) Selecting a manufacturing facility location is becoming much more complex with globalization.

Discuss the above statement.

(10 marks)

- (b) A Car Manufacturing Bhd is considering three countries to build its new plant. Five key success factors can be used to evaluate the prospective countries. A five-point likert scale can be used to evaluate each factor, where 1 = least desirable to 5 = most desirable. The Company has gathered the data and is tabulated in **Table Q4(b)**.

**Table Q4(b)**

Key Success Factor		Weight	Countries Rating		
			A	B	C
1	Technology	0.2	4	5	1
2	Level of education	0.1	4	1	5
3	Political and legal aspect	0.4	1	3	3
4	Social and cultural	0.1	4	2	3
5	Economic factors	0.2	3	3	2

- (i) Determine which country should be selected for the new plant. (8 marks)
- (ii) Determine whether conclusion in **Q4(b)(i)** will change if there is political unrest in Country B results in a lower score, 2 for political and legal aspects. (4 marks)
- (iii) Determine the decision if Country B's score drops even further, to a 1, for political and legal aspects. (3 marks)

**-END OF QUESTION-**