



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2015/2016**

COURSE NAME : PRODUCTION AND OPERATIONS
MANAGEMENT

COURSE CODE : BPB 31103

PROGRAMME : 2 BPA

EXAMINATION DATE : DECEMBER 2015/JANUARY 2016

DURATION : 3 HOURS

INSTRUCTION : ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

- Q1**
- (a) Define operations management. (2 marks)
- (b) Describe the role and responsibilities of an operations manager in a corporation. (3 marks)
- (c) Discuss how firms can attain competitive advantages through effective operations management. (10 marks)
- (d) Discuss the similarities and differences of operations management between the services and manufacturing sectors. (10 marks)
- Q2**
- (a) Explain **FOUR (4)** elements that are needed to develop an aggregate plan. (8 marks)
- (b) (i) Compare the chase versus level strategy options. (6 marks)
- (ii) Explain back order. (2 marks)
- (c) Ultra Fabrication has the following aggregate demand requirements and other data for the upcoming four quarters as shown in **Table Q2**.

Table Q2: Aggregate Demand Requirements and Other Data

| 1 | Quarter | Demand |
|------------|---------------------------|---------------------------------|
| | 1 | 1300 |
| | 2 | 1400 |
| | 3 | 1500 |
| | 4 | 1300 |
| Other Data | | |
| 2 | Previous quarter's output | 1500 units |
| 3 | Beginning inventory | 200 units |
| 4 | Stockout cost | RM50 per unit |
| 5 | Inventory holding cost | RM10 per unit at end of quarter |
| 6 | Hiring workers | RM4 per unit |
| 7 | Laying off workers | RM8 per unit |
| 8 | Unit cost | RM30 per unit |
| 9 | Overtime | RM10 extra per unit |

Determine which is the best production plan: Plan A—chase demand by hiring and layoffs; or Plan B—produce at a constant rate of 1200 and produce the remainder from overtime.

(10 marks)

- Q3** (a) (i) Define manufacturing cycle time. (2 marks)
- (ii) Identify **THREE (3)** major sources of variability in manufacturing. (6 marks)
- (b) A repetitive manufacturing firm is planning on level constant material use. The information in **Table Q3** has been collected. Currently, the firm operates 250 days per year.

Table Q3: Operations Data

| | | |
|---|--|--------|
| 1 | Annual demand | 22,000 |
| 2 | Daily demand | 88 |
| 3 | Daily production | 250 |
| 4 | Desired lot size (2 hours of production) | 63 |
| 5 | Holding cost per unit per year | RM50 |

- (i) Calculate the set-up cost based on the desired lot size. (7 marks)
- (ii) Calculate the setup time based on RM40 per hour set-up labor. (7 marks)
- Q4** (a) Discuss **FIVE (5)** major capacity strategy issues behind how operations configure, and reconfigure their capacity. (10 marks)
- (b) An Electronic Manufacturing Company is considering three countries in the Asia Pacific region to build its new plant. Five key success factors can be used to evaluate the prospective countries. A five-point likert scale has been 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**.

Table Q4: Country Rating Data

| | Key Success Factor | Weight | Countries Rating | | |
|---|----------------------------|--------|------------------|---|---|
| | | | X | Y | Z |
| 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 the appropriate country to be selected for the new plant.
(8 marks)
- (ii) Determine whether result in **Q4(b)(i)** will change if there is political unrest in Country Y results in a lower score, 2 for political and legal aspects.
(4 marks)
- (iii) Determine the decision if Country Y's score drops even further, to a score of 1, for political and legal aspects.
(3 marks)

-END OF QUESTION-