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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2011/2012**

COURSE NAME : PRODUCTION PLANNING AND CONTROL
COURSE CODE : BPC 22103
PROGRAMME : 2 BPB
EXAMINATION DATE : JUNE 2012
DURATION : 3 HOURS
INSTRUCTIONS : 1.ANSWER ALL QUESTIONS
2.ATTACH APPENDIX I WITH YOUR ANSWER BOOKLET

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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- Q1** Acme Sdn. Bhd. provides toilet bowls for the building industries. The company expected opening inventory is 600 toilet bowls. The company wants to increase the inventory to 700 by the end of planning period. The number of working days is the same for each period. The expected demand shown in **Table Q1**:-

Table Q1 : Sale Forecast

period	1	2	3	4	5	6	Total
sales forecast	730	690	730	670	600	680	4100

Based on the above,

- (a) Construct the total production required (4 marks)
- (b) Develop a level production plan (8 marks)
- (c) Develop a production plan using chase strategy (8 marks)

- Q2** An order for 100 of a product is processed on operation A and operation B. The setup time on A is 50 minutes, and the run time per piece is 9 minutes. The setup time on B is 30 minutes, and the run time is 6 minutes per piece. It takes 20 minutes to move a lot between A and B. Since this is a rush order, it is given top priority and is run as soon as it arrives at either workstation.

It is decided to overlap the two operations and to split the lot of 100 into two lots of 60 and 40. When the first lot is finished on operation A, it moved to operation B where it is set up and run.

- (a) Calculate the total manufacturing lead time for operation A and for B without overlapping. (8 marks)
- (b) Calculate the manufacturing lead time when the operation overlapped. (6 marks)
- (c) Calculate the time saved. (2 marks)

(d) Explain the responsibility of production activity control.

(4 marks)

Q3 A company normally ships a product by rail. Transport by rail costs \$400, and the transit time is 10 days. However, the goods can be moved by air at a cost of \$1000 and will take 1 day to deliver. The cost of inventory in transit for a particular shipment is \$100 per day.

(a) Calculate the total cost of transportation by rail and air.

(5 marks)

(b) Describe the best decision for them and the costs involved in their decisions.

(6 marks)

(c) Describe the **THREE (3)** functions in the flow of materials from supplier to consumer.

(9 marks)

Q4 (a) Describe **THREE (3)** important factors in managing MRP

(10 marks)

(b) Explain where does the following system work best and where it is not effective

(i) MRP

(ii) KANBAN

(10 marks)

Q5 Below are Bill of Material (BOM) for product A

Table Q5(a) : BOM product A

Product A	
Parts	Quantity (unit)
B	3
C	1
D	3

Table Q5(b) : BOM component B

Component B	
Parts	Quantity (unit)
X	2
Y	2

Table Q5(c): BOM component C

Component C	
Parts	Quantity (unit)
U	1
V	4

Table Q5(d) : BOM component D

Component D	
Parts	Quantity (unit)
X	3
V	2

- (a) Illustrate a multi level BOM Product Structure Tree. (5 marks)
- (b) The Master Planning Schedule (MPS) calls for the completion of 100 As in week 7 and 100 in week 10. There is schedule receipt at 50 at week 3 and 6. Production lot for A is 60. The remaining component production lot size is as per lot for lot. Opening inventory for A is 10, B is 50, C is 50, D is 10, X is 30, Y is 30, U is 50 and V is 30. Lead time for A is 2 weeks, B is 2 weeks, C is 1 week, D is 1week, X is 1 week, Y is 1 week, U is 2 weeks and V is 2 weeks.

Construct a MPS using the table in **APPENDIX 1**.

(15 marks)

END OF QUESTION PAPER

APPENDIX 1

	Week	1	2	3	4	5	6	7	8	9	10
Product A Lead Time:	Gross Requirement										
	Schedule Receipts										
	Projected Available										
	Net Requirement										
	Planned Order Receipt										
	Planned Order Release										
Part: Lead Time:	Gross Requirement										
	Schedule Receipts										
	Projected Available										
	Net Requirement										
	Planned Order Receipt										
	Planned Order Release										
Part: Lead Time:	Gross Requirement										
	Schedule Receipts										
	Projected Available										
	Net Requirement										
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