Document No : UniKL MFI_SD_AC41
Revision No: 02
Effective Date: 01 December 2008

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SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JANUARY 2014 SESSION

SUBJECT CODE	:	**FIB36403**
SUBJECT TITLE	:	**PRODUCTION & OPERATION MANAGEMENT**
LEVEL	:	**BACHELOR**
TIME / DURATION	:	**(2.5 HOURS)**
DATE	:	

INSTRUCTIONS TO CANDIDATES

1. **Please read the instructions given in the question paper CAREFULLY.**
2. **This question paper is printed on both sides of the paper.**
3. **Please write your answers on the answer booklet provided.**
4. **Answer should be written in blue or black ink except for sketching, graphic and illustration.**
5. **This question paper consists of TWO (2) sections. Section A and B. Answer all questions in Section A. For Section B, answer THREE (3) question only.**
6. **Answer all questions in English.**

THERE ARE 5 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

INSTRUCTION: Answer ALL questions.
Please use the answer booklet provided.

Question 1

(a) Describe the transformation process of these three business: an advertising agency, a bank, and a TV station.

(5 marks)

(b) Explain **five (5)** ways how bank compete for customers.

(5 marks)

(c) A multinational company normally has more than one plant, which located in many countries. Even though producing the same product with the same technology, the productivity for each plant is quite different. Discuss **three (3)** factors that caused the productivity differences among the plants.

(6 marks)

(b) How should the accuracy of forecasts be compared?

(4 marks)

Question 2

(a) Differentiate and illustrate the differences between layout of a carwash and a layout of a library.

(8 marks)

(b) Primary function of R&D group is to develop new products and to discover and create new products, processes, and services. Identifies **three (3)** ways the impact of R&D can bring to an organization.

(6 marks)

(c) A major responsibility for all managers is the support of company based systems designed to ensure the quality of products or services. Briefly discuss why quality has become such a live issue today?

(6 marks)

SECTION B (Total: 60 marks)

INSTRUCTION: Answer THREE questions ONLY.
Please use the answer booklet provided.

Question 3

(a) Green Grass's plant manager just received marketing's latest forecasts of fertilizer spreader sales for the next year. Assume that in order to produce the new fertilizer spreader on the assembly line requires doing the following steps in the order specified as Table 1 below, help her to design an assembly line (line balancing) to make 2,400 spreaders per week and calculate the line efficiency. The plant will operate 40 hours per week.

Table 1: Fertilizer spreader on the assembly line steps

Work Element	Description	Time (sec)	Immediate Predecessor(s)
A	Bolt leg frame to hopper	40	None
B	Insert impeller shaft	30	A
C	Attach axle	50	A
D	Attach agitator	40	B
E	Attach drive wheel	6	B
F	Attach free wheel	25	C
G	Mount lower post	15	C
H	Attach controls	20	D, E
I	Mount nameplate	18	F, G

(15 marks)

(b) In the basic EOQ model, if annual demand is 50, carrying cost is RM 2, and ordering cost is RM 15, calculate EOQ.

(5 marks)

Question 4

(a) Given in Table 2, the projected demands for the next six months, prepare an aggregate plan that uses inventory, regular time and overtime, and backorders. Regular time is 150 units per month. Overtime is a maximum of 20 units per month. Overtime cost is RM 30 per unit, backorder cost is RM 20 per unit, inventory holding cost is RM 5 per unit, regular time cost of RM 20 per unit, and beginning inventory is zero.

Table 2: Forecasted Demand

Month	Forecast
1	180
2	170
3	140
4	150
5	130
6	150

(12 marks)

(b) Apply Johnson's Rule to determine the optimum processing sequence for the jobs listed in Table 3 below. Draw a chart of the total throughput time.

Table 3 : Processing Time

	Processing Time (mins)	
Job	Center 1	Center 2
A	20	12
B	10	32
C	8	9
D	14	7
E	5	6
F	18	6

(8 marks)

Question 5

(a) Construct a product tree diagram and develop a material requirements plan that will yield 400 units of product P at the start of week 7, with the given following information in Table 4 below.

Table 4: Product P

Item	*Parent*	*Quantity for 1 of Parent*	*On Hand*	*Scheduled Receipt (in wk)*	*Lead Time*	*Order Quantity*
P	-	-	-	-	1	Lot-for-lot
A	P	1	100	0	1	Lot-for-lot
B	P	1	0	0	1	450
C	A,B	1,2	90	100 (wk 2)	2	600
D	B	2	50	80 (wk 2)	2	Lot-for-lot

(15 marks)

(b) Table 5 shows costs details to produce a cotton candy, will the company encounter profit if the quantity sold is 10,000 unit?

Table 5: Cost details

Fixed Cost	RM 15000
Variable Cost	RM 1.00 per unit
Revenue	RM 1.60 per unit
Design capacity	45,000 per unit
Effective capacity	40,000 units per year
Anticipated Output	36,000 units per year

(5 marks)

Question 6

(a) A manager has been using a certain technique to forecast demand for liters of ice cream for the past six periods. Actual and predicted amounts are shown in Table 6 below. Would a naive forecast have produced better results?

Table 6 : Actual and predicted amounts

Period	*Demand*	*Forecast*
1	90	87
2	85	88
3	91	87
4	92	89
5	95	90
6	88	92

(15 arks)

(b) Kaizen refers to philosophy or practices that focus upon continuous improvement of processes in manufacturing, engineering, business management or any process. Give two (2) examples of kaizen that can be apply in this exam hall.

(5 marks)

END OF QUESTION