CONFIDENTIAL

SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JANUARY 2014 SESSION

SUBJECT CODE	:	FVB 31203
SUBJECT TITLE	:	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) questions only.

6.   Answer all questions in English.

7.   FMEA Form is appended.

8.   Graph paper is appended.

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)   Differentiate between product manufacturer and services provider by providing three (3) examples.

(6 marks)

(b)   Productivity is the ratio of output to inputs in production; it is an average measure of the efficiency of production. Discuss three (3) ways an organization can increased their productivity.

(6 marks)

(c)   List four (4) key reasons for product design and development.

(8 marks)

Question 2

(a)   Product layout involves high utilization of labor and equipment. Illustrate one example the application of product layout in car wash shop.

(6 marks)

(b)   Explain why quality is important and describe the consequences of poor quality.

(8 marks)

(c)   The cost of quality can be split into 4 types. Explain and give example of any two (2) cost of quality.

(6 marks)

SECTION B (Total: 60 marks)

INSTRUCTION: Answer only THREE (3) questions.

Please use the answer booklet provided.

Question 3

Table 1 below shows data for the height of the mercury in glass, with help of the constant in Table 2, answer following:

        a) Calculate X bar and R values.

        b) Plot X-bar chart

        c) Plot R chart

        d) Interpret the charts.

(20 marks)

Table 1: Constants of $\overline{X}$ and _R_ chart:

Sub Group	6:00	10:00	14:00	18:00	22:00	X bar	R
1	14.0	12.6	13.2	13.1	12.1		
2	13.2	13.3	12.7	13.4	12.1		
3	13.5	12.8	13.0	12.8	12.4		
4	13.9	12.4	13.3	13.1	13.2		
5	13.0	13.0	12.1	12.2	13.3		
6	13.7	12.0	12.5	12.4	12.4		
7	13.9	12.1	12.7	13.4	13.0		
8	13.4	13.6	13.0	12.4	13.5		
9	14.4	12.4	12.2	12.4	12.5		
10	13.3	12.4	12.6	12.9	12.8		

Table 2: Constants of $\overline{X}$ and _R_ chart:

_n_	_A2_	_D4_	_D3_
2	1.88	3.267	---
3	1.023	2.575	---
4	0.729	2.282	---
5	0.577	2.115	---
6	0.483	2.004	---
7	0.419	1.924	0.076
8	0.373	1.864	0.136
9	0.337	1.816	0.184
10	0.308	1.777	0.223

Question 4

Table 3 shows MacApple Project. As a project manager, you need to inform your customer **how long** the project will take and **decide** which activities that can be delay and which activities cannot be delayed to inform your engineers.

Table 2 : MacApple Project activities

Activity	Description	Duration (Months)	Immediate Predecessors
A	General System Review	2	-
B	Processing Requirements Identification	3	-
C	Data Base Design	2	A
D	Control Requirements	4	A, B
E	Output Design	4	C
F	Equipment Selection/Acquisition	3	C
G	Reference Manual Identification	5	D, E
H	Design Phase Report Preparation	2	F, G
I	Client Presentation Preparation	1	H

(20 marks)

Question 5

Figure 1 shows the tasks of candy bar production. Production engineer wants to design an assembly line with desired cycle time of 0.6 mins, help him to do line balancing.
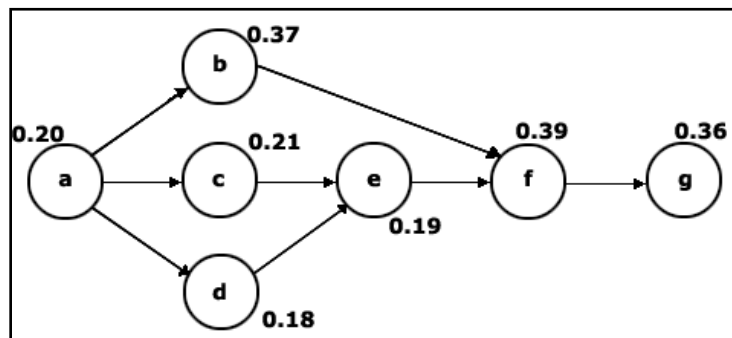
Figure 1: Candy Bar Production task in minutes.

(20 marks)

Question 6

(a) Figure 2 shows a picture of Eye Of Malacca which is manufactured by your organization. As a project engineer, perform FMEA process to anticipate what your project member could do to eliminate potential defects. Write your answer in the Process FMEA Form given in Appendix 1, by identifying at least five (5) possible causes of failure. Hint : gondola, cable,etc.

Figure 2: Eye of Malacca

(10 marks)

(b) A manager uses the following equation to predict monthly receipts: $Yt = 40,000 + 150t$. What is the forecast for July if $t = 0$ in April of this year?

(2 marks)

(c) Given forecast errors of 5, 0, -4, and 3, what is the mean absolute deviation?

(4 marks)

(d) Given an actual demand of 59, a previous forecast of 64, and an alpha of .3, what would the forecast for the next period be using simple exponential smoothing?

(4 marks)

END OF QUESTION

Failure Modes & Effects Analysis

Process/Product:		FMEA Date: (original)	
FMEA Team:		(Revised)	
Black Belt:		Page:	of

Process									Actions		Results				
Item Process Steps	Potential Failure Mode	Potential Effects of Failure	Severity	Potential Cause(s) of Failure	Occurrence	Current Controls	Detection	Risk Priority Number	Recommended Action	Responsibility and Target Completion Date	Action Taken	Severity	Occurrence	Detection	Risk Priority Number
							Total Risk Priority:				**Resulting Risk Priority**				

Appendix 1