



**INSTITUTE OF HUMAN RESOURCE ADVANCEMENT**  
**UNIVERSITY OF COLOMBO, SRI LANKA**  
**Masters Degree in Business Management - Course No.01**  
**3<sup>rd</sup> Semester Examination**  
(Held in January, 2014)  
**MBM 09 – Production and Operations Management**

**Instructions to the Candidates**

- (1) Total number of pages – Three (03)
- (2) Total number of questions - Six (06)
- (3) Answer any Five (05) questions
- (4) If a page or a part of this question paper is not printed, please inform the Supervisor immediately.
- (5) Time allocated for the examination is three (03) hours.
- (6) Write your index number in all pages of answer script
- (7) Tie up all answer sheets at the end of the examination

(01)

- I. What is operations management? Describe briefly. (05 Marks)
  - II. Briefly describe the historical development of operations management. (05 Marks)
  - III. "Operations does not mean only the productions". Comment on the above statement considering the new paradigm of operations management. (10 Marks)
- (Total 20 Marks)**

(02)

- I. What do you mean by operations strategy? Explain (05 Marks)
- II. State different trends affecting operations strategy decisions. (05 Marks)
- III. A manufacturing company produces two products "X" and "Y" which require cutting, folding and packaging. Following table shows that how many man hours each product requires in each of these three departments and the maximum number of man hours available per week in each department.

Department	Requirement of man hours		Total man hours available in the department
	X	Y	
Cutting	5	10	2000
Folding	10	5	2500
packaging	1	0.5	400

The profit contributions of "X" and "Y" are Rs. 15/- and Rs.10/- respectively.

- (a) As you are a operations manager in charge of these productions, calculate the optimum production mix which maximize the profit (use graphical method)
- (b) Comment on the resource utilization.

(10 Marks)  
**(Total 20 Marks)**

(03)

- I. Define project and project management and state the way of structuring projects. (8 Marks)
- II. The following table shows the data for the activities of a small project.

Activity	Duration (days)		
	Optimistic	Most likely	Pessimistic
1-2	2	8	14
1-3	5	9	13
2-4	4	4	4
2-6	2	8	14
3-4	8	15	22
3-5	2	4	8
4-5	3	5	10
5-6	2	5	8

- (a) Draw a network and find the expected project completion time. State the critical path (8 Marks)
  - (b) Find the project completion time which will have 99% confidence (12 Marks)
- (Total 20 Marks)

(04)

- I. Describe the generic product development process. (5 Marks)
  - II. Discuss the product design philosophy behind industrial design and design for manufacture and assembly. (10 Marks)
  - III. What factors must be traded off by product development before introducing a new product. (5 Marks)
- (Total 20 Marks)

(05)

I. Define capacity and strategic capacity planning and state time horizons for capacity planning.

(10 Marks)

II. What is the capacity balance? Why is it hard to achieve? What methods are used to deal with capacity imbalance?

(10 Marks)

III. A company is considering to manufacture one of three products. The demand for each product has been estimated as high, moderate and Low Following information are given.

Product	Demand and the Probability					
	High	Prob.	Moderate	Prob.	Low	Prob.
X	40,000	0.6	20,000	0.3	10,000	0.10
Y	60,000	0.5	30,000	0.3	20,000	0.20
Z	40,000	0.7	15,000	0.2	(15000)	0.10

Use decision tree method and select the best choice

(10 Marks)

(Total 20 Marks)

(06)

Write brief notes on followings

- Basic production Layout formats
- Six sigma
- Business process Reengineering (BPR)
- Lean manufacturing
- Material Requirement Planning (MRP)

(4x5 = 20 Marks)

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