



UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF MANAGEMENT AND FINANCE

Postgraduate & Mid-career Development Unit

Master of Business Administration (Weekday Program) Semester II- Second-half (Repeat)
Examination – July, 2017

MBA 538 – Operations Management

Three (03) Hours

Answer Five (05) questions in all selecting at least Two (02) questions from each part.

Answers for part I and Part II should be written in two separate answer booklets and handed over to the examination supervisor separately.

PART I

1. “Operations function of any organization, positions the business within the competitive market.”
 - i. Comment on the above statement highlighting few organizations established in locally or globally.

(08 Marks)
 - ii. What are the different levels the operation functions could perform in an organization?

(06 Marks)
 - iii. Briefly discuss the role of any five decision areas coming under operations management function of an organization.

(06 Marks)

(Total 20 marks)

2. 'Quality is the key for entering into the competitive market'
- i. What are the different aspects of businesses that could contribute to the quality management function?
(06 Marks)
 - ii. Select any product or service from Sri Lankan market and identify the quality characteristics of it.
(04 Marks)
 - iii. Discuss how Total Quality Management (TQM) practice could help managing quality of any organization.
(10 Marks)
- (Total 20 marks)**

3. "Lean manufacturing is a practice many business organizations attempt to establish within their organizational contexts."
- i. Explain the focus of lean manufacturing process.
(04 Marks)
 - ii. Briefly discuss any four principles of lean manufacturing.
(06 Marks)
 - iii. What are the different wastes in focus of the lean manufacturing process?
(10 Marks)
- (Total 20 marks)**

4. 'Competitive product design is fundamental for any business'
- i. Differentiate between products and services
(04 Marks)
 - ii. What are the steps involved in designing a product.
(06 Marks)
 - iii. Explain the importance of 'concurrent engineering' in product designing
(04 Marks)
 - iv. Explain the meaning and importance of 'standardization', 'simplification' and 'robustness' in a product design.
(06 Marks)
- (Total 20 marks)**

PART II

5. i. Discuss the advantages of Manufacturing Requirement Planning (MRP) (06 Marks)
- ii. A product P has a lead time of 3 days to assemble it. The sub-assemblies used for this are one unit of Q and two units of R. The manufacturing lead times of Q and R are 2 days and 1 day respectively. It is required to consume 5 units of raw material S to manufacture a single unit of Q while the manufacturing of one unit of R needs one unit of T. The purchasing lead time of S and T are 2 days each. Draw the product tree structure of the product P indicating the quantity requirement and lead times for each item. (06 Marks)
- iii. The CEO of a company insists the board of directors to change their existing on premise ERP system to a hosted ERP system in the cloud. Discuss how he would justify his argument to the board considering advantages of having a hosted ERP system. (08 Marks)

(Total 20 marks)

6. i. Explain the forecasting process in terms of choosing an appropriate forecasting method to your organization. (08 Marks)
- ii. Historical demand of a product for last 6 periods is given below:

Period	1	2	3	4	5	6
Demand	12	11	15	12	16	15

Find the forecast for the seventh period using,

- Weighted moving average with weights of 0.60, 0.30 and 0.10 for the periods 4, 5 and 6 respectively.
- Simple three month-moving average
- Single exponential smoothing with $\alpha = 0.2$ and the period 6 forecast = 13

(12 Marks)

(Total 20 marks)

7. i. Discuss briefly with examples how Dell Computers achieved a successful supply chain management practices with near to zero inventory levels. (04 Marks)
- ii. Compare a traditional organization with a supply chain practicing organization in the context of inventory management, inventory flows, cost, information, risk and planning. (04 Marks)
- iii. Briefly discuss steps involved in implementing supply chain practices in a manufacturing organization. (04 Marks)
- iv. The following data have been collected from the financial statement of the firm ABC Ltd. to measure the performance of the supply chain for the past year.

Cost of goods sold	\$ 5,200,000
Gross profit	\$ 700,000
Operating costs	\$ 500,000
Operating profit	\$ 200,000
Total raw material inventory	\$ 300,000
Fixed assets	\$ 750,000
Total finished goods inventory	\$ 400,000
Long-term debt	\$ 300,000
Total WIP value	\$ 500,000

Assuming 52 business weeks for the past year, express total inventory as weeks of supply inventory turnover. (08 Marks)

(Total 20 marks)

8. i. State two techniques that you would use in selecting a plant location. Explain what difficulties you may face in using these techniques. (04 Marks)
- ii. What are the objectives of assembly line balancing? Discuss main consequences you may expect if an assembly line is not balanced properly? (04 Marks)
- iii. Explain the Delphi method of forecasting. (04 Marks)
- iv. What do you mean by aggregate planning? Why it is critical to the success of a business? (04 Marks)
- v. 'Transportation decisions should not be purely made based on the transportation cost alone'. Elaborate this statement with an example. (04 Marks)

(Total 20 marks)