

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
POSTGRADUATE DIPLOMA IN TECHNOLOGY IN INDUSTRIAL
ENGINEERING – LEVEL 7

FINAL EXAMINATION – 2009/2010

MEX 7215– PRODUCTION PLANNING AND MATERIALS MANAGEMENT

DATE : 28 March 2010

TIME : 1400 hrs – 1700 hrs

DURATION : Three (03) hours



Answer any five (05) questions. All questions carry equal marks.

- Q1. (a) What are the advantages in integrated materials management concepts? (7 marks)
- (b) What are the special requirements to be considered for organizations undertaking key projects? (6 marks)
- (c) Discuss the importance of materials planning. (7 marks)
- Q2. (a) “The systematic formulation and adoption of standards is referred to as Standardization “ Explain this statement. (8 marks)
- (b) Explain factors to be considered in selecting a supplier. (12 marks)
- Q3. (a) The task of finding the “right” site for Warehouse is a complex phenomenon. How do you solve this problem? (10 marks)
- (b) What are the factors that should be considered in designing a Warehouse? (10 marks)
- Q4. (a) Information in relation to three (03) products manufactured by ABC Fabricators are given bellow.

Cost/unit (Rs/=)	Product X	Product Y	Product Z
Material Cost	Rs 140.00	Rs 200.00	Rs 280.00
Labour Cost	RS 20.00	Rs 30.00	Rs 40.00
Variable Cost	Rs 30.00	Rs 40.00	Rs 60.00
Machine Hrs/unit	0.20 Hrs	0.30 Hrs	0.40 Hrs
Selling Price	Rs 400.00	Rs 700.00	Rs 900.00
Demand / month	2000 units	1500 units	1000 units

Note:

- a) Machine is operated 24 hrs/day and 26 days per month. (It is assumed that there is no Machine stoppages due to breakdown or any other matters.)
- b) Total fixed cost per month is Rs 400,000/=

- c) There is an agreement to supply at least 40% of the Product Z.
1. What is the best mix for production to maximize the profitability without condition (c)?
 2. What is the best mix for production to maximize the profitability with condition (c)?
- (20 marks)

- Q5. (a) What is the main objective of an inventory control system? Explain. (7 marks)
- (b) Why buffer stock is required? Explain. (6 marks)
- (c) Discuss the limitation of ABC analysis. (7 marks)

- Q6. (a) Discuss the Factors influencing locational decisions. (6 marks)
- (b) Potential locations at A, B, C have the cost structures shown below. The product is expected to Sell at Rs 130/-

Potential Locations	Fixed Cost/year Rs.	Variable cost/unit Rs.
(A)	150,000	75.00
(B)	200,000	50.00
(C)	400,000	25.00

- (i) Find the most economical location for an expected volume of 6000 units per year.
 - (ii) What is the expected profit if the site selected in (A) is used?
 - (iii) For each location find the best output range.
- (14 marks)

- Q7. (a) List all possible benefits which can be realized by properly implementing GT concept in manufacturing. (10 marks)
- (b) Briefly explain the major activities of a production planning and controlling system. (10 marks)

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