THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
POSTGRADUATE DIPLOMA IN TECHNOLOGY IN INDUSTRIAL ENGINEERING – LEVEL 7
FINAL EXAMINATION – 2010/2011
MEX 7215– PRODUCTION PLANNING AND MATERIALS MANAGEMENT
DATE : *27 March 2011*
TIME : *1400 hrs – 1700 hrs*
DURATION : *Three (03) hours*

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

Q1. (a) Write brief notes on followings.
(i) Productivity
(ii) Integrated Materials Management.
(iii) Group Technology
(4 marks each)

(b) Explain the process of preparing a materials budget.
(8 marks)

Q2. (a) List and briefly explain the documents used from ordering of materials to storing in an organization.
(8 marks)

(b) What are the important steps to be followed in price negotiation for a capital item?
(12 marks)

Q3. (a) What are the factors to be considered in selecting a supplier?
(10 marks)

(b) (i) How do you control quality of materials purchased from suppliers?

(ii) How do you evaluate a supplier?
(10 marks)

Q4. (a) Discuss special characteristics of capital equipment purchases.
(5 marks)

(b) What are the factors to be considered in setting up a Warehouse?
(8 marks)

(c) Following charts shows the supply points and demand points of an organization. What is the best location for the warehouse?

Point	Demand	Distance (X) (km)	Distance (Y) (km)	Weight allocated
S1 (Supply)	200	10	5	5
S2 (Supply)	150	10	10	3
S3 (Supply)	200	5	10	2
D1 (Demand)	150	10	10	5
D2 (Demand)	250	10	5	3
D3 (Demand)	150	5	10	2

(7 marks)

Q5. (a) Clarify different types of production systems and explain with examples related to Sri Lankan context.

(5 marks)

(b) To make product A and B following items and quantities are required.

	Item X	Item Y	Item Z
Product A	2	1	1
Product B	3	2	0

Marketing forecast and production days are given as follows.

Month	Forecast for A	Forecast for B	No of Production Days
January	270	370	22
February	250	350	17
March	400	500	22
April	100	200	15
May	200	250	20
June	230	280	21
July	200	250	21
August	200	250	23
September	250	350	22
October	250	350	23
November	300	400	23
December	350	450	21

(i) Prepare a chart showing daily demand for each and every month and average annual daily demand.

(ii) Prepare a production plan and a purchasing plan to meet the sales requirement while maintaining the lowest inventory.

(15 marks)

Q6. Potential locations of products A,B and C have the cost structures given below. The product is expected to Sell at Rs 200/=

(a) Find the most economical location for an expected volumes of 12,000 units

(5 marks)

(b) What is the expected profit if the site selected in (a) is used?

(5 marks)

(c) What output range is best for each location?

Potential Location	Fixed Cost/ Year (Rs/-)	Variable Cost/ unit (Rs/-)
A	300,000/=	100.00
B	400,000/=	75.00
C	800,000/=	50.00

(10 marks)

07. (a) Explain man-machine system and its relationship to Ergonomics.

(10 marks)

(b) What are the ergonomic factors to be considered in an Industrial environment?. Explain in detail.

(10 marks)