THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
POSTGRADUATE DIPLOMA IN TECHNOLOGY IN INDUSTRIAL ENGINEERING – LEVEL 7
FINAL EXAMINATION – 2011/2012
MEX 7215 – PRODUCTION PLANNING AND MATERIALS MANAGEMENT
DATE : *18 March 2012*
TIME : *1400 hrs – 1700 hrs*
DURATION : *Three (03) hours*

Answer any of the five (05) questions.

1. (i) Explain how the materials form an important part of the current assets in an Organization.

(7 marks)

(ii) Explain the process of preparing materials budget.

(7 marks)

(iii) Discuss methods of requesting supplies from purchasing department.

(6 marks)

2. (i) How do you prepare standard specifications for your purchases? Explain.

(6 marks)

(ii) What is meant by "cost analysis"? What are the most important elements affecting cost?

(7 marks)

(iii) What are the factors to be considered when selecting a sub-contractor?.

(7 marks)

3. (i) What are the factors to be considered when selecting a site for a warehouse?

(6 marks)

(ii) What are the basic principles to be followed up when preparing a layout for a warehouse?

(7 marks)

(iii) What is the aim of an inventory control system?

(7 marks)

4. Certain information related to 3 products manufactured by XYZ manufacturing facility is given bellow. Total available production time for a month is 35000 Man Hours. Total fixed cost for utilizing the facility is Rs 1,400,000.00

Cost/unit (Rs/=)	Product X	Product Y	Product Z
Material Cost	Rs 160.00	Rs 210.00	Rs 270.00
Labour Cost /Man Hour	Rs 40.00	Rs 40.00	Rs 40.00
Variable O/H per Man Hour	Rs 70.00	Rs 70.00	Rs 70.00
Production Time Hrs	0.80	1.1	1.2
Selling Price	Rs 560.00	Rs 680.00	Rs 720.00
Demand / month	14000	15000	12000

If there is a confirmed order of 8000 units of Product Z, how do you plan production to maximize the profitability.

(20 marks)

5. (i) Discuss the limitations of A-B-C analysis?

(8 marks)

(ii) Potential locations of A, B, C have the cost structure shown below. The product is expected to sell at Rs 250.00 per unit.

(a) Find the most economical location for an expected volume of 8500 units per year?

(4 marks)

(b) What is the expected profit if the site selected in (a) is used for 8500 units?.

(4 marks)

(c) For what output range each location is best?

(4 marks)

Potential Location	Fixed cost Rs / Year	Variable cost Rs / unit
A	250,000/=	100/=
B	400,000/=	80/=
C	600,000/=	60/=

6. (i) How do you apply line balancing technique in a production facility?.

(5 marks)

(ii) Arrange following operations in the most effective way with required work locations. The target is to produce 50 units per day. The available man hours per day is 150.

operation	Operational Time (man Hours)
Assembling the motor	0.9
Assembling Impeller	0.3
Assembling Volute	0.3
Testing	0.2
Painting	0.3
Final operations	0.6
Packing	0.3

Assume that there is no absentism or breakdown.

(15 marks)

7. (i) Briefly discuss the objectives of plant layout?

(6 marks)

(ii) Why planning and controlling of batch type production is difficult compared to mass production?

(7 marks)

(iii) Briefly explain the major activities of a production planning and controlling system.

(7 marks)