

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
POSTGRADUATE DIPLOMA IN INDUSTRIAL ENGINEERING – LEVEL 7
FINAL EXAMINATION – 2006/2007
MEX7215/MEP1205 – PRODUCTION PLANNING & MATERIAL MANAGEMENT
ENGINEERING

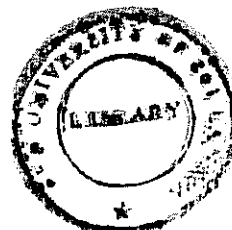


DATE : 08 April 2007
TIME : 0930 hrs – 1230 hrs
DURATION: Three (03) hours

006

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

1. 1.1 Describe the scope of logistics management as applied to the supply chain of a manufacturing organisation. [08 marks]
- 1.2. Discuss the advantages of an integrated approach to managing materials in an organisation. [12 marks]
2. 2.1 Describe the macro and micro level considerations for planning materials in a business? [04 marks]
- 2.2. Justify the conditions under which the Material Requirements Planning (MRP) techniques using Bill of Materials (BOM) and past consumption analysis are applicable for planning material requirements. [06 marks]
- 2.3. Discuss the purchasing activities required to be performed in order to ensure the availability of right material at the right time and place at the right price. [10 marks]
3. 3.1 State the supplier performance factors to be considered in evaluating and rating the service quality of a materials supplier. [06 marks]
- 3.2 Describe the reasons for subcontracting in an engineering project. [06 marks]
- 3.3 Discuss the factors to be considered in assessing the capability of a sub-contractor for successfully meeting the contract obligations. [08 marks]
4. 4.1 Describe five factors that are generally important in deciding upon the location of a warehouse. [05 marks]
- 4.2 Discuss five basic considerations for optimising the space and handling activities inside a large warehouse and also refer to quantitative techniques for supporting such planning decisions. [10 marks]
- 4.3 Discuss the benefits offered by Automated Storage and Retrieval Systems (ASRS). [05 marks]



5. 5.1 Production systems using functional or process layout will be able to adopt product layout by standardising the product and the production process. Discuss the advantages and disadvantages of changing from functional layout to product layout. [10 marks]
- 5.2 Explain what a group cell layout. Indicate the quantitative techniques that can be applied for designing a group layout and balancing it? What are the problems of balancing a group layout? [10 marks]
6. 6.1 What are the problems and objectives of aggregate production planning? What are the quantitative methods that can be used for aggregate planning? [07 marks]
- 6.2 Describe how a Master Production Schedule is developed for Material Requirements Planning (MRP) and discuss how MPS drives the planning of materials in order to reduce the excess inventory creation which is commonly found in traditional inventory control systems based on economic order quantity and re-order level. [08 marks]
- 6.3 Describe the uses of a Bill of Material (BoM) in MRP? Describe two different forms of BoM used in practice indicating the purpose. [05 marks]
7. 7.1 Integrated information systems which use the Enterprise Resources Planning (ERP) concepts have improved the Planning and Control effectiveness in leaps and bounds for business organisations that implemented it successfully. Differentiate between the working of a traditional information system or legacy system and an ERP system for managing production operations. [08 marks]
- 7.2 Describe the many functional areas that are normally supported by a modern ERP system and discuss how this leads to improvements in the management decisions. [08 marks]
- 7.3 What are the obstacles to be overcome by a business organisation in implementing an ERP system? [04 marks]
8. 8.1 Describe the various operational activity areas that should be covered by a comprehensive plan for the implementation of Just-In-Time (JIT) production in a production organisation. What are the benefits to be reaped by JIT? [10 marks]
- 8.2 Discuss the objectives and the scope for supply chain management (SCM). [05 marks]
- 8.3 What are the requirements that should be met by a software based system for Supply Chain Management? [05 marks]

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