

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
MASTER OF TECHNOLOGY IN INDUSTRIAL ENGINEERING - LEVEL 7
FINAL EXAMINATION - 2008/2009
MEX 7120 - PROJECT MANAGEMENT
DATE : 28 March 2010
TIME : 1400 hrs - 1700 hrs
DURATION: Three (03) hours



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

1. A description of a computer project is given below. You are requested to produce and analyze a project network. Each activity is denoted by a capital letter with time duration given within brackets:

Hardware design (A, 20 weeks), Hardware manufacturing (B, 20 weeks), Hardware testing (C, 5 weeks), and this hardware testing requires a test facility (D, 10 weeks). Simultaneously the software is to be designed (E, 30 weeks) and subsequently coded (F, 20 weeks). Software System testing will require tests to be designed (G, 5 weeks). When both the tested hardware and the coded software are available, complete system will be tested (H, 10 weeks). At the end of this testing the project is completed.

- a) Produce a time-limited schedule for the computer project. Assume that the only resource of interest is the number of staff required. Also note that the members of the staff are interchangeable between various activities. The staff requirement throughout the duration of each activity is shown below:

Activity	Duration	Staff
Hardware Design	20	3
Providing test facility	10	3
Hardware manufacturing	20	4
Hardware testing	5	3
Design of software	30	2
Coding software	20	4
Design test	5	2
Testing complete system	10	3

- i. Find the number of staff required, if perfectly flat loading could be achieved?
- ii. Show the optimum resource loading within the given constraints.
- iii. Suggestions for measures that you might consider for rearranging the work realistically to decrease further peak load, without reducing the estimate of person-week required on a given activity.

2. (a) Explain what are the main factors that are to be considered in a project feasibility study?
 - (b) Manager, Chester Ltd received an application from one of its divisional managers to acquire a machine for \$ 50,000.00 to manufacture silk scarves over the next four years. Annual sales are likely to be 1000 units at a selling price of \$50.00. The marginal cost of a scarf believed to be \$20.00 and in addition, fixed cost per annum of \$10,000.00 will be incurred. If Chester's cost of capital is 14%;
 - i. Draft a reply of Chester's manager in response to the application on the new project feasibility.
 - ii. Explain when will the "project break even" take place?
3. (a) The basic model of the project life cycle involves the stages classified as "plan" "do" "check" and "act". Identify examples of the criteria that may be assessed at the end of each stage.
 - (b) Discuss limitations of this model in relation to organizational learning.
4. According to the concept of project team management, the leader must get the balance between 'control' and 'empowerment' of the team member right.

Discuss with scenarios how a project manager might decide on /achieve an appropriate balance for a particular project. Substantiate the answer with examples.
5. In many projects, even if a problem exists, it may have a pre-restructured solution and the level of involvement of the project manager is minimal. Discuss different types of organizational structures for project teams. Illustrate your answer with examples.
6. (a) What are the factors involved in risk identification and risk analysis?
 - (b) Identify major countermeasures with regard to project risk management. Explain each possible countermeasures and describe the benefits of project risk management with suitable examples.
7. (a) "WBS should align with organizational strategy". Do you agree or disagree? Illustrate your answer with examples.
 - (b) What are the salient features that should be taken into account when preparing a work breakdown structure?
 - (c) How do you prepare a cost breakdown structure? Substantiate the answer with examples.

8. (a) "Identification of stakeholders is critical to a project success". Critically analyze this statement.
- (b) A news agent's shop is a part of a major national chain. The branch in question sells a wide selection of national and local newspapers, range of magazines, booklets and books. The executive and regional management of the chain has given the store manager some degree of independence. They select items to sell, decide what stocks to hold and how these are displayed. The branch employs a store manager, two full time assistants (one of whom act as a assistant manager), Saturday helpers, delivery boys and girls. Apart from the main public sales and display area, there is a separate office and a staff rest room. One of the part time assistant who works mainly in the office, acting as a stock clerk and book keeper.

Regional manger decides on a project to install a central computer with terminals in each branch. Apart from keeping a basic staff attendance record for computing wages, store manager is free to decide what use may be made of the new facility.

- a. Who might be the major influence on this branch?
- b. Who are the stakeholders in existing practices?
- c. Who will be affected by the project? and how might the project affect them?
- d. Draw a stakeholder map clearly indicating the relationship between stakeholders.

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