

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
MASTER OF TECHNOLOGY IN INDUSTRIAL ENGINEERING – LEVEL 7
FINAL EXAMINATION – 2006/2007
MEX 7120 – PROJECT MANAGEMENT

DATE : 23 March 2007
TIME : 0930 hrs – 1230 hrs
DURATION: Three (03) hours



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

1. (a) Risk management is a critical process in project management, which is not often conducted or handled well. Risk management allows the project manager to view the project across the life cycle to identify, assess, prioritize, respond to and control project risk. Effective risk management increases the probability of project success.

Explain how customer and stakeholder satisfaction, profitability and competitive advantage increase as a result of successful risk management.
(10 marks)
- (b) Assume that you are appointed as the project manager in a government project to uplift the Sri Lankan Tourism Industry.

Develop a risk response plan for the project.
(10 marks)
2. Outsourcing is becoming more common in organizations globally.
 - (a) Discuss common reasons for outsourcing of projects. (10 marks)
 - (b) Explain the key processes and activities involved in project procurement management. (10 marks)
3. Organizations performing projects will usually divide each project into several project phases to provide a better management control and appropriate links to the ongoing operations.
 - (a) Draw a representative project life cycle diagram and milestone plan for a consumer electronics product development project and describe briefly the major activities at each stage. (7 marks)
 - (b) Draw a sample Work Breakdown Structure for the above project. (8 marks)
 - (c) Suggest a suitable organization structure for the above project and rationalize your proposal. (5 marks)



4. One of the key outputs of project cost management is cost estimates.
- (a) Write short notes on the following types of cost estimates and discuss their applications in construction industry. (5 marks)
- (1) Order of magnitude estimates
 - (2) Parametric estimates
 - (3) Definitive estimates
- (b) Critically discuss the typical problems with regard to cost estimates and propose possible solutions. (5 marks)
- (c) In a construction project, the original total project budget for a period of 24 months is \$250,000. The budgeted cost of work scheduled to date is \$55,000. However, actual cost of work performed is \$45,000 and 20% of the work is to be completed.
Calculate the following factors and comment on the success of the project.
- (i) Earned value of the project to date.
 - (ii) Cost Variance.
 - (iii) Schedule Variance.
 - (iv) Estimated cost at completion.
 - (v) Estimated time to complete.
- (10 marks)
5. (a) Explain key function of Work Breakdown Structure(WBS) and discuss why it is important to the Project Manager in managing a project. (8 marks)
- (b) Assume that you have been appointed as the Project Manager in a project of installation of waste water treatment plant in a factory located in a residential area under a capital expenditure approval of their multi-national cooperation in the USA. (12 marks)
- (i) Identify different stakeholders and their needs.
 - (ii) Develop a WBS for this project.
 - (iii) Prepare a project plan for the project and state your assumptions separately.
6. (a) Explain the key difference between functional management and project management. (5 marks)
- (b) Explain the different types of organizational structures, and their advantages and disadvantages, in managing projects. (8 marks)
- (c) Discuss the desirable characteristics of a successful project manager. (7 marks)

7. (a) "Project planning is a cycle that is repeated on an on-going basis".
Comment on the statement given above. (5 marks)
- (b) List out the elements in a standard project charter and discuss the usefulness of this in conflict resolution in Project Management. (5 marks)
- (c) A free standing brick garage is to be built with windows in the sides and back. The doors are at full height and seating under the roof beam. There will be an electric light point for which the cabling will run under the garage base to a distribution box in the nearby house. The activities and their duration times are as given below. (10 marks)

Activities		Duration (days)
A	Setout site and excavate	4
B	Place shuttering	2
C	Fabricate metal mesh	4
D	Dig cable trench	2
E	Lay conduit in trench	2
F	Order and deliver ready mixed concrete	14
G	Pour base and harden	2
H	Order and deliver windows	14
I	Lay bricks to windows	16
J	Order and deliver windows	6
K	Fit windows	2
L	Order and deliver roofing and door parts	24
M	Finish brick laying	24
N	Glaze and paint windows	4
O	Fit roof beams	4
P	Secure roof	8
Q	Order and deliver doors	20
R	Fit doors	4
S	Strip shuttering	2
T	Pull cable and connect mains	2
U	Back fill trench clearance of base	2
V	Clean up	2

- (a) Draw arrow diagram for the above project.
- (b) What is the project duration?
- (c) Complete earliest and latest start and finish times.
- (d) Compute the total float and free float.

(8) "The successful contract management is a vital part of effective project management".

- (a) Explain why? (7 marks)
- (b) Name three types of contracts used in business and discuss the requirements, advantages and disadvantages in any of the two types mentioned above. (8 marks)
- (c) Discuss the suitable criteria for a vendor appraisal system for service industry. (5 marks)

END