

**THE OPEN UNIVERSITY OF SRI LANKA**

Faculty of Engineering Technology  
Department of Electrical & Computer Engineering  
Bachelor of Software Engineering

**FINAL EXAMINATION – (2013/2014)****ECI6260 – Software Project Management****CLOSED BOOK EXAM**Time Allowed: **3 hours**Date: **24 August 2014**Time: **0930 – 1230 hours****INSTRUCTIONS TO CANDIDATES**

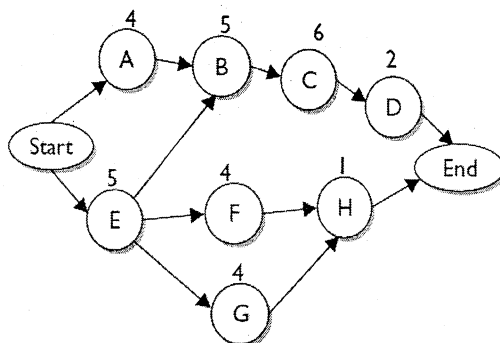
1. This question paper contains ten questions in **PART A** and five questions in **PART B** on 7 pages.
2. Answer **ALL** questions in **PART A** using the attached MCQ answer sheet.
3. Attach this MCQ answer sheet with your *PART B* answer scripts.
4. Answer **any FOUR** questions from **PART B**.
5. Clearly state all your assumptions (if any).

Continued...

**PART A:****Answer ALL questions**

1. The WBS helps the team to focus. It is an excellent tool for communications and the basic for developing realistic estimates. You can best describe a WBS as a tool for the tracking of the:
  - a. the schedule
  - b. assigned resources
  - c. project costs.
  - d. project scope.
  
2. You and several of your key team leader are really struggling with estimating the overall cost of the project. The most probable cause for this estimating difficulty can be contributed to:
  - a. initial poor scope definition
  - b. lack of required resources.
  - c. insufficient funds.
  - d. problems with the overall schedule.
  
3. Which factors should you consider when adding a resource to your project team?
  - a. The impact the resource will have on the cost of the system
  - b. The impact the resource will have on the duration of the system
  - c. The impact the resource will have on the histogram.
  - d. Whether the resource is available, and if it will have impact on the cost and duration of the system
  
4. You are on the project selection team and must decide on only one project to approve. Of the following 2 possible project which would you select and why?  
Calgary: payback period is 12 months ,and NPV is 350  
Toronto: payback period is 24 months, and NPV is 400
  - a. project Toronto because the NPV is the highest number.
  - b. project Calgary because the payback period is shorter than the project Toronto.
  - c. can not be determined based on the information provided.
  - d. project Calgary because the NPV is positive and the payback period is sooner than Toronto.
  
5. A project has payback period of 1 and a half of years. What does that mean?
  - a. It will take the project one and half years before they start to incur costs.
  - b. The project will be completed in less than 2 years.
  - c. The company will receive the profits for the first one and half years of the project.
  - d. It will take the project one and half years to cover the investment and start generating revenue.
  
6. First thing Tuesday morning ,one of your team members drops into your office looking very thrilled. He eagerly tells you he is adding extra functionality to the project without imparting the cost the schedule. As the project manager your first step should be:

- a. Understand what the new functionality will add to the project and then action accordingly.
  - b. Implement change control processes to track the change.
  - c. Inform the customer of the change to the scope.
  - d. Notify the functional manager that scope changes are not approved.
7. You are the project manager for a project with the following network diagram. Studying the diagram, which path is the critical path?



- a. ABCD
  - b. EBCD
  - c. EFH
  - d. EGH
8. The scope management process involves all of the following except:
- a. Continuous validations to ensure all the work is completed.
  - b. Saying no to work not included in the project or not part of the project character.
  - c. Giving the customer more than expected.
  - d. Controlling what is and what is not in the project.
9. Which of the following is not a basic need as identified in Maslow's hierarchy of needs?
- a. Sex
  - b. Sleep
  - c. Security of Health
  - d. Breathing
10. You have negotiated a major deliverable with a contractor several of your colleagues have utilized in the past without problems. Its is critical the contactor meet an August 15th deliverable. This is an example of:
- a. Objective
  - b. Goal
  - c. Constraint.
  - d. Assumption.

**PART B:**

Answer any FOUR (04) questions.

**Question 1**

- (a) What is a project charter? What should be included in a project charter?  
[4 Marks]
- (b) What is a Project Scope Statement? What are the main components of a Project Scope Statement?  
[4 Marks]
- (c) Discuss the evolution of Software Development Methodologies, giving specific examples. Your answer should include advantages and disadvantages of each methodology.  
[4 Marks]
- (d) What is your preferred Software Development Methodology? Justify why you have selected this methodology over other similar methodologies.  
[8 Marks]

**Question 2**

- (a) Briefly explain the following terms:  
(i) Discount rate in Net Present Value method of project evaluation  
(ii) Net Present Value  
(iii) Payback Period  
[5 Marks]
- (b) Assume you are the project manager of a software development project  
A project that has exactly one task. The task was baselined at 8 hours, but 11 hours have been spent and the estimate to complete is 1 additional hour. The task would have been completed already. Assume an Hourly Rate of \$100 per hour.  
Using this information: Calculate the following values, showing all your workings.  
(i) The budgeted cost of work Scheduled (BCWS)  
(ii) The budgeted cost of work performed (BCWP)  
(iii) Actual cost of work performed (ACWP)  
(iv) Cost performance index (CPI) or burn rate  
(v) Estimate of the final project cost at completion (EAC)  
[15 Marks]

**Question 3**

- (a) What is the main purpose of Communication? [2 Marks]
- (b) Identify and briefly describe four different types of networks used in Communication. [4 Marks]
- (c) Evaluate the positive and negative effects of each type of network to the operations of the company. [8 Marks]
- (d) As a project manager, explain the steps you would take to minimize or eliminate the negative effects of different communication networks identified in question 3(b). [6 Marks]

**Question 4**

- (a) What is Software Release Management? [4 Marks]
- (b) What are the main activities involved in Software Release Management? [4 Marks]
- (c) Briefly describe 5 best practices that will improve software release management process. [12 Marks]

**Question 5**

Read the following description and answer the questions given below:

*Teams are the typical building blocks of an organization: They provide companies with the means to combine the various skills, talents and perspectives of a group of individuals to achieve corporate goals. In the past, managers used to co-locate team members because of the high levels of interdependencies that are inherent in group work. Recently, though, more and more companies are beginning to organize projects over distance, with teams increasingly consisting of people who are based in dispersed geographical locations, come from different cultural backgrounds, speak different languages and were raised in different countries with different value systems.*

*Over the past 10 years, various studies have investigated the differences in performance of co-located and dispersed teams, quietly assuming that members of*

*the latter never meet in person and members of the former work together in the same office throughout a project. But dispersion is not only a matter of degree; it is also a matter of kind. Most teams are dispersed on some level. They can be spatially separated (from "across the hall" to "scattered worldwide"), temporally separated (spanning different time zones), configurationally uneven (for example, five members in one location and two in another) and culturally diverse. And as past research has repeatedly shown, even the smallest degrees of dispersion, such as working on different floors in the same building, can greatly affect the quality of collaboration.<sup>1</sup> In our own study, we have investigated the performance of 80 software development teams with varying levels of dispersion, including those with members in different cities, countries or continents. Such geographically distributed teams have commonly been referred to as "virtual" teams,<sup>2</sup> but that label is something of a misnomer, because these groups are very real with respect to the work they can accomplish. We found that virtual teams offer tremendous opportunities despite their greater managerial challenges. In fact, with the appropriate processes in place, dispersed teams can significantly outperform their co-located counterparts.*

*[Source: MIT Sloan Management Review at: <http://sloanreview.mit.edu/article/how-to-manage-virtual-teams/>]*

- (a) What are the major advantages of using dispersed teams as against using co-located teams?  
[4 Marks]
- (b) What are the major challenges faced by dispersed teams as against collocated teams?  
[4 Marks]
- (c) Describe three ways in which the management can encourage dispersed teams work better.  
[6 Marks]
- (d) Discuss the following statement giving appropriate examples.  
"It is impossible for conflicts to occur in dispersed teams."  
[6 Marks]

**Question 6**

- (a) What are the main steps involved in using the Critical Path Method (CPM) for project planning? [4 Marks]

Use the information given in Table 1, to answer questions (b) to (e). Assume all tasks will start as soon as possible:

Task	Description	Duration (Months)	Predecessor/s
A	Product Design	5	
B	Market Reserach	1	
C	Production Analysis	2	A
D	Product Model	3	A
E	Sales Brochure	2	A
F	Cost Analysis	3	C
G	Product Testing	4	D
H	Sales Training	2	B,E
I	Pricing	1	H
J	Project Report	1	F,G,I

**Table 1: Activities involved in a project to develop and market a product**

- (b) Draw a network diagram to represent the above information. [6 Marks]
- (c) Determine the critical path of the project [4 Marks]
- (d) Calculate the planned duration of the project in months [2 Marks]
- (e) Identify any non-critical tasks and the float (free slack) on each. [4 Marks]

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