

The Open University of Sri Lanka
 Department of Electrical and Computer Engineering
 Bachelor of Software Engineering



Final Examination – (2016/2017)
ECI6260 Software Project Management

Time Allowed: 3 hours
Closed Book Exam

Date: **06 December 2017**
 Time: **0930 – 1230 Hrs.**

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of three (3) parts.
2. Total number of pages of this question paper is nine (9).
3. **Part A** of this question paper contains ten (10) MCQs. Answer all questions. Each correct answer will receive 2 marks. There will be no negative marks for the incorrect answers. All your answers to the MCQs must be marked on the answer sheet provided. Attach the MCQ answer sheet with the answer scripts of Part B and Part C. **[10 x 2 Marks]**
4. **Part B** contains a case study. Answer all questions. **[40 Marks]**
5. **Part C** contains four (4) questions. Answer any two (2) questions. **[2 x 20 Marks]**

Part A - Multiple Choice Questions. Answer all questions.

[10 x 2 Marks]

1. What is the purpose of a project charter?
 1. To formally authorize a project or a phase and document initial requirements which satisfy the stakeholder's needs and expectations.
 2. To document how the project will be planned, executed, monitored/controlled, and closed.
 3. To link the project, which is going to be planned, executed, and monitored/controlled to the ongoing work of the organization.
 4. To describe the process of performing the work defined in the project management plan in order to achieve the project's objectives.
2. The concept of (the) _____ states that changes related to one requirement scope, time, or cost will at least influence one other element.
 1. Three-point estimation
 2. Triple constraint
 3. Three wise men
 4. Three needs theory

- 3 The communications management plan is a document which includes descriptions of;
1. Project level performance reports
 2. Activity level status reports
 3. Stakeholder communication requirements
 4. Responsibility assignments
- 4 As the project manager, you decided to arrange a team meeting to identify and analyze lessons learned from quality control with stakeholders. What should you do with them?
1. Document them and make them part of the historical database for the project and the performing organization.
 2. Discuss them with management and make sure that they remain otherwise confidential
 3. Publish them in the corporate newsletter.
 4. Follow your strategic decisions, independent from lessons learned. These decisions have been made and should be implemented whatever the outcomes are.
- 5 According to Bruce Tuckman, which are the stages of team development?
1. Honeymoon, rejection, regression, acceptance, re-entry
 2. Forming, storming, norming, performing
 3. Tell, sell, consult, join
 4. Direct, support, coach, delegate
- 6 What is not a reason for companies to organize lessons learned?
1. Lessons learned databases are an essential element of the organizational process assets.
 2. Lessons learned should focus on identifying those accountable for errors and failures.
 3. Lessons learned sessions should bring about recommendations to improve future performance on projects.
 4. Phase-end lessons learned sessions provide a good team building exercise for project staff members.

- 7 Which document is developed along the risk management processes from identify risks through perform qualitative risk analysis to control risks?
1. List of risk triggers
 2. Risk register
 3. Risk mitigation
 4. Decision tree
- 8 A customer is requiring a minor scope change and expects you to do this without delays and additional costs. You believe that you have adequate authorization to make the decision by yourself, but you are not quite sure. What should be your next steps?
1. A requested change is always an opportunity to get more money paid by the customer and to secretly solve schedule and quality problems. You should make some reasonable estimates on time, costs, risks etc. and then add a nice margin on top of that to calculate the new price.
 2. Customer satisfaction is your top priority. The customer gives you an opportunity to increase their satisfaction, which you should use to the maximum benefit. Most project managers have contingencies to cover risks; these can be used to pay the additional costs.
 3. Before making a decision you should have a look at the customer's parking lot. If you find there many expensive, new models, it is likely that you can use the requested change to increase the profit from the contract. Otherwise you should reject the request.
 4. Handle the request according to the integrated change control processes described in your management plans. Then make a decision together with the appropriate change control body, whether the increased customer satisfaction will be worth the extra costs, work, risks etc.
- 9 At the beginning of project execution, you notice different opinions between team members relating to project work, deliverables and to the level of overall complexity. What should you do right now?
1. Give your team members some time to develop a common understanding of the project scope and product scope. Upcoming interface problems may be resolved later.
 2. Use the risk management processes to identify and assess risks caused by misunderstandings and develop a plan with measures in order to respond to them.
 3. Organize meetings to identify and resolve misunderstandings between team members in order to avoid interface problems, disintegration and costly rework early in the project.
 4. Use interviews in private with each individual team member to inform them of your expectations and your requirements in an atmosphere of confidence.

- 10 You are in the process of planning a project and found that stakeholders often have varying objectives and requirements. This makes it hard to come up with a plan with which all objectives will be met. What is probably most helpful to ensure common understanding?
1. Ask the project stakeholders to build focus groups in order to discuss and remedy conflicting interests.
 2. Create an exhaustive document describing your point of view and ask stakeholders to review it.
 3. Let each stakeholder write a statement of work, merge the documents to a project scope statement.
 4. Use your authorization as the project manager to clearly prioritize the different objectives.

Part B

Answer all questions.

Initiated in 2016, the Birth, Marriage, Death (BMD) project was one of the key re-engineering government projects to be implemented by ICTA of Sri Lanka in collaboration with the Registrar General's Department (RGD). Having completed the initial phases aimed at testing public document conservation concepts and their feasibility at the national level, phase 2 is to be rolled out with rapid deployment at remaining divisional secretariats.

The existing solution shall be enhanced by leveraging advancements of IT and digital communications. It shall also be integrated with the national middleware infrastructure to share related information to stakeholder organizations that require BMD related information for verification purposes in conducting their services. The BMD service shall be available online via the internet and through mobile services. Estimated completion is in 2018.

Objectives of the project are:

- facilitate real time online verification of BMD related information
- facilitate payment mechanisms such as credit cards, mobile money and direct fund transfers via Lanka Government payment service 2.0.
- improve efficiency and productivity of government operations
- eliminate the misuse of government funds

(Source: <https://www.icta.lk/projects/birth-marriage-death-bmd/>)

A project team from ICTA is allocated for the implementation of phase 2 this project and you are assigned as the Project Manager. A grant of Rs. X million is received

from the Government of Japan to expedite this project.

- A. Define the stakeholders of a project.

[3 Marks]

- B. At what stage of the a project or a phase should the stakeholders be identified? Justify your answer.

[5 Marks]

- C. How do you classify the stakeholders based on level of authority (“power”) and level of concern (“interest”)? Explain using a diagram.

[5 Marks]

- D. What is the main output of the “Identify Stakeholders” process? Explain using a sample template of this document.

[5 Marks]

- E. List stakeholders of the BMD project.

[6 Marks]

- F. Using an appropriate diagram, classify 4 of the identified stakeholders of the BMD project according to their power and interest.

[4 Marks]

- G. As the Project Manager of the BMD project, it is your responsibility to derive the Stakeholder Communication strategy. Outline the Communication Plan for the above selected 4 stakeholders.

[12 Marks]

Part C

Answer any 2 questions.

- 1 “SL Soft” is a Sri Lankan software development startup which develops applications for the Sri Lankan market. It develops applications for wide range of industries. Currently the total number of staff is 27 with the following designations and skills.

- 8 Software Engineers with web and mobile software development skills
- 5 Quality Assurance Engineers for ensuring the quality of the products
- 2 Business Analysts with domain knowledge in related industries
- 3 staff members who are responsible for the office administration, legal activities and human resource management.
- 7 Customer Support Engineers who are responsible for all the after sales support services and operate 24 x 7 basis.
- 2 Sales and Marketing executives who are responsible for all the pre-sales activities:

Knowing the importance of following a structured project management processes, Amila Perera, the owner of SL Soft, consulted you to get your services as a Project Management consultant.

You, as an experienced consultant, immediately realized that SL Soft doesn't follow any structured Project Management practices nor have any specialized Project Managers.

(a) Amila asked you to identify which activities of the company can be structured under project management practices. Explain the difference between Projects and Operations.

[4 Marks]

(b) List which activities of SL Soft can be categorized under Projects and Operations.

[4 Marks]

(c) Amila wants to recruit few suitable Project Managers immediately. A project manager is a highly skilled knowledge worker who has received rigorous training and knowledge. Your help is needed in recruiting Project Managers. List at least six (6) key skills and characteristics you look in a suitable candidate for this position. Explain how each of these skills and characteristics would help in successful compilation of a project.

[12 Marks]

- 2 (a) You are on the way to a project status report meeting which the client and some external stakeholders would be participating. You were informed by a colleague about a significant technical problem on the project that has put your project behind the schedule. This is not good news because completion time is the number one priority for the project. However, you are confident that your team can solve the problem if they are free to give their undivided attention to it and that with hard work you can get back on schedule. Therefore, your colleague suggests you not to inform about the delay to the client. Furthermore, he reminds you that if you tell the client about the problem, the client will demand a meeting with your team to discuss the implications of the problem. You can also expect her to send some of her personnel to oversee the solution to the problem. These interruptions will likely further delay the project. What should you tell your client about the current status of the project and what is your action plan to overcome the problem?

[10 Marks]

- (b) You are responsible for installing a Bank Automation system. Your team has collected estimates and used the WBS to generate a project schedule. You have confidence in the schedule and the work your team has done. You report to top management that you believe that the project will take 110 days and be completed by March 5. The news is greeted positively. In fact, the project sponsor reveals that the system do not have to be delivered until April 1. You leave the meeting wondering whether you should share this information with the project team or not. What is your reaction this?

[10 Marks]

- 3 Write short notes on any of the five (5) topics given below. Give practical examples where necessary.

- (a) Change Control Board
- (b) Scrum Methodology
- (c) Project Charter
- (d) Work Breakdown Structure
- (e) Traceability Matrix
- (f) Initiating Process Group
- (g) Three-Point Estimating
- (h) Contingency Reserve

[5 x 4 Marks]

- 4 (a) Using the Activity Node standard provided, draw the Precedence Diagram for the activities listed in the table below. Use the standard where the Early Start of the first activity as 0 (zero). Fill the Float value for each activity at the appropriate position in the nodes.

[8 Marks]

- (b) According to the diagram, what are the activities on the critical path?

[2 Mark]

- (d) What is the purpose of identifying the critical path?

[3 Marks]

- (c) In the given scenario, activities B, C and D are done in parallel. Listed below are the available resources for these 3 activities. If you are the project manager, assuming any person is skilled enough to do any of these tasks, whom should you assign to each activity? Justify your selection using the findings in the diagram.

- Person X – average performer
- Person Y – fast and reliable
- Person Z – slow and unreliable

[6 Marks]

Activity Details:

Activity ID	Duration	Predecessor Activities
A	5	-
B	15	A
C	10	A
D	5	A
E	15	B, C
F	10	B, C, D
G	10	F
H	35	E, G

Activity Node Standard:

Early Start	Duration	Early Finish
Activity ID		
Late Start	Float	Late Finish

END OF PAPER