The Open University of Sri Lanka

Faculty of Engineering Technology

Department of Electrical & Computer Engineering

Study Programme	: Bachelor of Software Engineering Honors
Name of the Examination	: Final Examination
Course Code and Title	**: EEI6560/ECI6260 Software Project Management**
Academic Year	: 2019/2020
Date	: 26th September 2020
Time	: 0930-1230hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.

2. Total number of pages of this question paper is seven (7)

3. This question paper consists of three (3) parts.

4. **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]**

5. Part **B** contains a case study. Answer all questions. **[40 Marks]**

6. **Part C** contains four (4) questions. Answer any two (2) questions. **[2 x 20 Marks]**

7. This is a Closed Book Test **(CBT).**

8. Answers should be in clear handwriting.

9. Do not use red colour pen.

Part A - Multiple Choice Questions. Answer all questions.

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[10 x 2 Marks]

1. Which of the following is NOT true for a project?

    1. Projects are constrained by limited resources

    2. Projects are planned, executed, and controlled

    3. Projects create a unique product or service

    4. Projects are ongoing and repetitive

    5. Projects can be killed at any time

2. During the quality testing of the new software integration project, the results shows performance variation from Quality management plan. Thus, the project manager asked quality team to investigate the root cause of the variance and resolve it to get back on track. What type of action did the project manager did the project manager request?

    1. Corrective action

    2. Preventive action

    3. Defect repair

    4. All of the above

    5. None of the above

3. Company XYZ decided to terminate your 8-month project during the 3rd month due to budget cuts, as the project manager for this project what should you do next?

    1. Try to convince the management to reconsider their decision

    2. Ask the management to consider the project as successful according to the current rate of performance

    3. Do nothing since the management decision is final

    4. Transfer the finished and unfinished deliverables to concerned parties

    5. Keep working on the project until all the allocated funding is used

4. In a particular project, the agreed process for decision making within the project is to reach unanimity with voting between 5 Change Control Board members. Based on this, when a change request was submitted to add new scope to the running project, in which case should you go in for the change?

    1. Three out of the five approved

    2. Four out of the five approved

    3. The project sponsor approved

    4. Any of the above

    5. None of the above

5. You are hired as a project manager to work for Company XYZ customer projects. In your first project, you gave high focus on using of automated tools. This has made your project management team wonder about the significance of using such change from the way they used to work in the company. How would you advise the management team?

   1. It is a part of tailoring project integration management considerations
   2. It is a new trend and good practice for project integration management
   3. It is how you do project management
   4. It is an existing practice within the company
   5. It is to convince the team that you know project management

6. You have experienced a number of problems with the smartphone you are producing for your customer. The end users of the smartphone want a lightweight device that takes photos and can be used as a navigator. It should have fast-loading software with reliable internet connection. Which of the problems below is related to the grade of the phone?

   1. The phone is slow to start up
   2. The camera is only .3 megapixels
   3. Internet connection drops regularly
   4. The phone is heavy
   5. GPS connection drops regularly

7. A detailed project schedule can be created only after creating the:

   1. Project budget
   2. Project management plan
   3. Detailed risk assessment
   4. Bi-directional Traceability Matrix
   5. Work breakdown structure

8. The target weight of a device is 3 pounds. You as the project manager take a sample of five devices and find that their weights are 3.4, 3.41, 3.4, 3.39, and 3.4 pounds each. You would most likely describe the weight of the widgets as:

   1. Accurate but not precise
   2. Precise but not accurate
   3. Accurate and precise
   4. Neither accurate nor precision
   5. Accuracy and precision are not applicable

9. A project manager is leading a project to investigate the feasibility of constructing a dam to generate hydroelectric power. The project needs to be analyzed from technical, economical, and social points of view. The project manager has created the project charter on behalf of the project sponsor, and it is now approved. Which of the following processes should be performed next?

    1. Develop Project Management Plan

    2. Identify Risks

    3. Identify Stakeholders

    4. Develop Project Charter

    5. Create Work Breakdown Structure (WBS)

10. Quality is:

    1. - Meeting and exceeding the customer's expectation

    2. Adding extras to make the customer happy

    3. The degree to which the project meets requirements

    4. Conformance to management's objectives

    5. Matrix used to measure the performance of the project team

Part B - Answer all questions.

e-Heritage Project:

Heritage tourism has emerged as one of the most successful types of modern tourism. However, at present, the access to information on cultural heritage is limited and scattered. The accuracy and consistency of available information are also of concern.

Therefore, the ICTA initiated the 'e-Heritage Project' to introduce cutting-edge technology for the storage and dissemination of information on the cultural heritage of Sri Lanka.

It is a three-year (2016-2018) project, implemented in close collaboration with the Ministry of Education and other national stakeholders. The ICTA will obtain the support of service providers and experts in the fields of cultural heritage, archaeology and tourism promotion during the course of implementation. Sustainability will be ensured through the collaboration with stakeholders to enhance benefits to tourists, students, academia and the society.

The project's aim is to improve tourists' access to information, tourists' knowledge on and satisfaction at heritage sites through a comprehensive digital heritage framework with view to raise Sri Lanka's image as a 'heritage destination'.

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(a). List the following information needed to create the Project Charter for the e-Heritage Project.

   i. High-level requirements

[5 marks]

   ii. Summary milestone schedule

[5 marks]

   iii. Summary budget

[5 marks]

   iv. Project approval requirements (how to define project success, who decides its' success and who signs off on the project)

[5 marks]

(b) Prepare the Risk Register for the e-Heritage Project with five (5) major risks which include four (4) negative risks and one (1) positive risk. The Risk Register should include the following columns:

   i.   Risk

   ii.   Owner

   iii. Reason / Cause

   iv.   Effect

   v.   Probability as a percentage

   vi.   Impact in measurable terms

   vii. Level of Risk as Low, Medium or High

   viii. Type of Risk Response Strategy (Avoid, Mitigate etc.)

   ix.   Risk Response

[20 marks]

Part C - Answer any 2 questions.

1. You are the newest member to join a team which was recently formed to develop a new software solution. You observe that the team members spend more time on discussing internal issues than focusing on the core activities of the team. Different team members have differing ideas and perspectives on the goals of the project. Team

members are spending time attempting to establish themselves and their position in relation to other team members. The leader of the team is being challenged by the team members of varies reasons.

(a) At which stage this team is in, according to Bruce Tuckman's Team Development Model?

[5 marks]

(b) What are the stages expected next for the team according to Bruce Tuckman's Model? Explain the significance of each of these stages.

[15 marks]

2. Due to the COVID-19 outbreak, your organization decided that all staff should immediately start working from home. Although technology wise all staff were equipped and ready to work from home, as the Project Manager of the Software Development team, you realized that your team is not ready to cope up 'with the challenges ahead. You decided to talk to your team through a video conference call to discuss about the potential non-technical challenges a typical IT team would face when working from home. You will be proposing solutions to eliminate or minimize the impact of those challenges. Prepare the outline of your speech to your team members.

[20 marks]

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

(a) Contingency Reserves

(b) Fast tracking

(c) Change Request

(d) Recognition and Rewards

(e) Stakeholder Register

(f) Basic Communication Model

(f) Work Performance Data

[5 x 4 marks]

4. Following is the cost of quality for a software development company for the year 2019. As a consultant, you were asked to analyze the Cost of Quality and propose ways to reduce it for the year 2020 onward.

	Cost in Rs. (in thousands)
Automated testing tools	60
Cost to resolve customer complaints	90
Design review	10
Additional resources for rework	80
Final product inspection and testing	250
Redesign	75
Non-Functional testing	5
Re-development	300
Internal audits	50
Vendor evaluation and testing	0
Functional testing	80
Re-deployment at client servers	140
Price concession due to faults	150
Procedure writing	50
Process Capability studies	80
Penalty paid to customer for delay in operations	600
Retesting	150
Re-document and update changes	300
Training and education	50
Warranty costs	200
Total Cost of Quality	2,720

(a) As part of your analysis, categorize the above costs under Preventive Costs, Appraisal Costs, Internal Failure Costs and External Failure Costs. (Hint: There are 5 items each for all the 4 categories.) Find the total cost of each category.
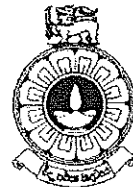
[10 marks]

(b) By analyzing the total costs of each category, explain what the company has done wrong. Propose and justify a strategy for the company to reduce the total cost of quality.

[10 marks]

END OF PAPER

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General Instructions

1. Read all instructions carefully before answering the questions.
2. Answer **all** questions in Section A
3. Questions in Section A carry equal marks.
4. Answer for Section A should mark in this sheet.
5. Attached this answer sheet with Section B and Section C answer book.

ANSWER SHEET FOR SECTION A

INDEX NO: | | | | | | |
| --- | --- | --- | --- | --- | --- |

1). | i | ii | iii | iv |
| --- | --- | --- | --- |

2). | i | ii | iii | iv |
| --- | --- | --- | --- |

3). | i | ii | iii | iv |
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4). | i | ii | iii | iv |
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5). | i | ii | iii | iv |
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