The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Electrical and Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	**: EEI6360/EEI6560- Software Project Management**
Academic Year	: 2020/21
Date	: 09th January 2021
Time	: 0930-1230hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Fifteen (15)** questions in **Seven (7)** pages
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.
4. Attach the MCQ answer sheet with the answer book **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. Answer for each question should commence from a new page.
8. This is a Closed Book Test **(CBT).**
9. Answers should be in clear hand writing.
10. Do not use red colour pen.

Part A - Multiple Choice Questions. Answer all questions. [10 x 2 Marks]

1 Why do we need a project charter?

1. To formally authorize a project or a phase of a project and document initial requirements which satisfy the stakeholder's needs and expectations.
2. To use as a detailed reference document on how the project will be planned, executed, monitored and closed.
3. To use as a brief overview of the project goals to share with the sponsor.
4. To explain the processes used to perform the work defined in the project management plan in order to achieve the project's objectives.
5. To share with non-stakeholders to make them aware of a new project.

2 Which concept states that a change done in either the scope, time, or cost will at least influence one other element?

1. Three-point estimation
2. Triple constraint
3. Three Gorges Dam
4. Three needs theory
5. Triple bottom line

3 What does the communications management plan include?

1. Project level status reports
2. Activity level performance reports
3. Project Manager communication skills
4. Stakeholder responsibility assignments
5. Stakeholder communication requirements

4 What is the purpose of finding lessons learned of a project?

1. To share with all the stakeholders of the project
2. To discuss them with management and make sure that they remain confidential
3. To publish them in the corporate website
4. Follow your strategic decisions, independent from lessons learned. These decisions have been made and should be implemented whatever the outcomes are

5. Document them and make them part of the historical database for the project and the performing organization

5 What are the stages of team development as described by Bruce Tuckman?

1. Connection, rejection, regression, acceptance, re-connection
2. Forming, storming, norming, performing
3. Tell, sell, consult, reject
4. Direct, support, coach, delegate
5. Meet, greet, engage, perform, depart

6 What is not a reason for a company to have a session of lessons learned?

1. Lessons learned databases are an essential element of the organizational process assets.
2. Focus on identifying those responsible for errors and failures.
3. Bring recommendations to improve future performance on projects.
4. Provide a good team building exercise for project staff members.
5. Innovative approaches and good work practices can be shared with others

7 As there is a high demand for resources with the limited availability, you had to adjust the start and end dates of the project to balance the demand for the resources. What is the technique you followed?

1. Resource Smoothing
2. Resource leveling
3. Crashing
4. Fast tracking
5. Critical Path Analysis

8 A customer wants some additional functionality to a product but without any addition to the time or cost allocation. As per your understanding, you have the authority to decide on this, but you are not sure what you should do. What could be your next step?

1. A requested change is always an opportunity as you get more money paid by the customer. You can secretly solve schedule and quality problems with this additional money. Therefore, you should make some reasonable estimates on time, costs, risks etc. and then add a margin on top of that to calculate the new price.
2. As customer satisfaction is your top priority, when the customer gives you an opportunity to increase their satisfaction, 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 deciding, 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 decide together with the appropriate change control body, whether the increased customer satisfaction will be worth the extra costs, work, risks etc.
5. Customers always try to get more for what they pay. Do not proceed with this request unless the customer can successfully convince the project owner.

9 At the start of the project, you observe different views between team members. Conflicts are mainly on project work, deliverables and to the level of overall complexity. What should you do right now?

1. Let the team work for a while to develop a common understanding of the project scope and product scope. Upcoming issues may be resolved later.
2. Identify and assess risks caused by misunderstandings using the risk management processes. In order respond to them, develop a plan and share with all team members.
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.
5. Identify the team members who can successfully influence others and let them try to convince the others to accept the opinion of the majority.

10 During the project planning you discover that most stakeholders often have varying objectives and requirements. Therefore, you cannot finalize the plan until you identify what all the requirements are, and which requirements need to be met. To ensure common understanding, what would be most helpful?

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.

5. Inform the Project Sponsor about the conflict between the stakeholders as the Project Manager is not authorized to make negotiations among the stakeholders.

Part B - Answer all questions.

1 Pre-Arrival Clearance Application for arrivals at the airport:

Sri Lanka has introduced a pre-arrival clearance process to immigration process at Bandaranaike International Airport, Katunayake. This, under the guidance of Ministries of Defense and Health has been implemented under the supervision of Information and Communication Technology Agency (ICTA) of Sri Lanka. The application has been developed completely by a set of volunteers from the ICT industry.

The airlines have been instructed to provide further information about passengers in the manifest, in particular the origin of travel (the port of first embarked, not just last port). This process identifies passengers with high risk before they land, so the authorities can be ready to take necessary measures on their arrival.

This the pre-arrival clearance system integrates with the Health Ministry Disease Surveillance system so that all flagged travelers are automatically registered in the disease system. Then Airport and Aviation Services (Sri Lanka) can meet flagged travelers at the gate directly and supply and install manual alert ring on the immigration counter to guide the cleared passengers to quarantine.

This is funded by the Department of Immigration and Emigration.

ICTA, gratefully acknowledges the contribution by volunteers in developing this application.

(Source: https://www.icta.lk/covid19-response)

You have been chosen as the Project Manager representing ICTA to lead the activities of developing and implementing the above project.

(a). Identify five (5) main stakeholders of this project.

[5 marks]

(b) For the five (5) identified stakeholders in (a), compare their 'level of authority (Power)' and 'level of concern (Interest)' by using an appropriate tool.

[10 marks]

(c) Use an appropriate tool to record the Current Engagement and Desired Engagement, of the five (5) identified stakeholders in (a).

[10 marks]

(d) Based on the above analyses on Power vs Interest and Current vs Desired Engagement of the five (5) identified stakeholders in (a), prepare the Stakeholder Communication plan in the following format.

[15 marks]

	Reason for the distribution of information	Expected impact to stakeholder engagement	Time frame and frequency for the distribution of information	Language and Communication Channel /Media
Stakeholder 1				
Stakeholder 2				
Stakeholder 3				
Stakeholder 4				
Stakeholder 5				

Part C - Answer any 2 questions.

1 (a) Using the below given Activity Node standard, 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. **[13 Marks]**

Activity Details:

Activity ID	Duration	Predecessor Activities
A	5	-
B	5	A
C	10	A
D	5	B, E
E	15	C
F	5	C
G	10	E
H	8	E, F
I	10	D, G, H
J	5	I

Activity Node Standard:

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

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

[2 Marks]

(c) Although the initially estimated duration for activity H is 8 days, later, it was realized that a total of 10 days are needed for activity H. What would be the impact to the project with this change? What would be the project manager's approach towards execution of activity H with the above change?

[5 Marks]

2 You are the Manager of a software development project with a project team of 35 engineers. Apart from the technical team who is in Sri Lanka, all the other stakeholders of the project are from different countries. As the country approaches the post-pandemic stage, your organization requested you to choose a work model from the following.

1. Work from home / Remote work
2. Work at office premises
3. Hybrid work model (combination of work from home and work at office)

Choose a model from above and justify your selection with at least 3 reasons. Also list down at least 3 drawbacks of your selected model.

Clearly mention the assumptions and constraints.

[20 marks]

3 You are a project manager in a software development company which has undertaken to develop and install a Bank Automation system. Based on the requirements collected, your team has prepared a WBS and the project schedule. Total project effort is 230 person-days and scheduled to be completed by June 3. As the project manager, you have the confidence that your team can successfully complete the project as predicted in the schedule. Client is delighted to hear the project status and informs you that they do not need the system ready until July 1. Should you share this information with the project team? What is your reaction to this?

[20 Marks]

4 Discuss the difference of the given terms.

i. Primary Risk vs Secondary Risk

ii. Push Communication vs Pull Communication

iii. Project Statement of Work vs Project Charter

iv. Mitigating a risk vs Contingency planning **[5 x 4 marks]**

END OF PAPER