THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. DEGREE PROGRAMME 2024/2025
FINAL EXAMINATION
CSU5300: IT PROJECT MANAGEMENT
DURATION: TWO HOURS ONLY (2 HRS)

Date: 27th April 2025

Time: 1:30pm – 3.30pm

General Instructions

1. Read all the instructions carefully before answering the questions.
2. This question paper consists of (06) questions in (04) pages.
3. **Answer any four (04) questions only.** All questions **carry equal marks.**
4. Answer for each question should commence from a new page.
5. Draw fully labelled diagrams where necessary.
6. Involvement in any activity that is considered as an exam offense will lead to punishment.
7. Use blue or black ink to answer the questions.
8. Clearly state your index number in your answer script.

Use below "strategic project" related details where applicable in each question:

ABC Tech Solutions, a leading IT services provider in Sri Lanka, has initiated a **strategic project** to develop and deploy a cloud-based **Integrated Service Management System (ISMS)** for one of its key telecom clients. The system aims to centralize service desk operations, automate incident and request management, integrate real-time reporting, and enhance overall customer experience.

The ISMS will consist of five major modules of *Incident Management (IM), Change Management (CM), Asset Management (AM), Reporting & Analytics (RA), Self-Service Portal (SSP)*

The project involves a cross-functional team including cloud architects, User interfaces (UI) / User Experience (UX) designers, System developers, QA engineers, and stakeholder representatives from the client's operations and IT departments.

The *expected timeline is 6 months,* and the project has a *fixed budget of LKR 10,000,000.* The project manager is expected to ensure timely delivery, quality outputs, and full stakeholder engagement throughout the process.

Useful formulae:

SPI (Schedule Performance Index) = EV / PV, CPI (Cost Performance Index) = EV / AC

Q1

i.   What is the *importance of clearly defining the project scope* in the ISMS project at ABC Tech Solutions?

ii.   Identify and briefly *describe two approaches* that could be used to *define and break down the scope* of the ISMS project to derive its Work Breakdown Structure (WBS).

iii.   What components together forms the project *"scope baseline"?* explain using its *three (3)* components.

iv.   **The goal** of deploying cloud-based ISMS should be "**SMART**".

        a. Explain what a "SMART" goal is?

        b. If you were the project manager, you need to support in defining SMART goals for this project to include in the project charter? Write down *two (2)* such SMART goals.

Q2

i.   What is the *purpose of cost management* in the context of the ISMS project?

ii.   Analytical techniques are used in checking the financial position of the project. Explain *"Return on investment (ROI)"* and *"Payback Period".*

iii.   The project team is planning to use a **definitive cost estimate**. Why might this be more suitable for the ISMS project *compared to a rough order of magnitude (ROM)*?

iv.   At the end of month 2, the following performance data for the "**Asset Management (AM) module**" was recorded:

- Planned Value (PV) = LKR 2,000,000
- Earned Value (EV) = LKR 1,500,000
- Actual Cost (AC) = LKR 2,500,000

        a. Calculate SPI and CPI for the Asset Management (AM) module.

        b. Discuss the AM module's performance in terms of schedule and budget.

Q3

i.   What is the *objective of quality management* in the development of the ISMS project?

ii.   Mention and explain *two (2) tools or techniques* the project team can use *during quality assurance or quality control* for the **Reporting & Analytics (RA)** module.

iii.   The "Reporting dashboard" met functionality requirements *but failed under heavy data load*. What *quality principle does this violate* and how should it have been addressed?

iv. *After client (customer) feedback*, the *Incident Management (IM) module* was found to *have a high error* rate during peak (high loading) hours.

    a. As this is an "external failure cost", pls explain the impact on the project quality.

    b. How can the project manager apply quality control measures to prevent similar issues in other modules of the project?

Q4

i. Why is effective human resource management critical in the *cross-functional* ISMS project?

ii. Identify *three (3) key elements* that should be *included in the human resource management plan* for this project.

iii. Discuss *a common communication challenge* that might occur between the client's operations team and the cloud architects (in the project team) during ISMS development.

iv. During a sprint review, developers misunderstood client feedback, causing a misaligned feature in the **Change Management (CM)** module.

    a. What *gaps in communication management* might have contributed to this issue?

    b. Suggest *steps the project manager can take to improve communication* clarity and accountability moving forward.

Q5

i. Why is *risk management* especially *important* in IT projects like ISMS development?

ii. What are the attributes of a *risk register*, and how should they be used in the ISMS project?

iii. Give an example of a *positive risk* in this project and how the team might *use* it.

iv. The team identified a *40% chance* that a *third-party* integration in the **CRM module** could *delay* module deployment *by 2 weeks*.

    a. What *risk response strategy* should be applied in this situation (avoid, transfer, mitigate, accept)? Justify your answer.

    b. How should this *risk be documented and tracked* in the risk register considering the *Probability* (likelihood), *Impact* (severity)?
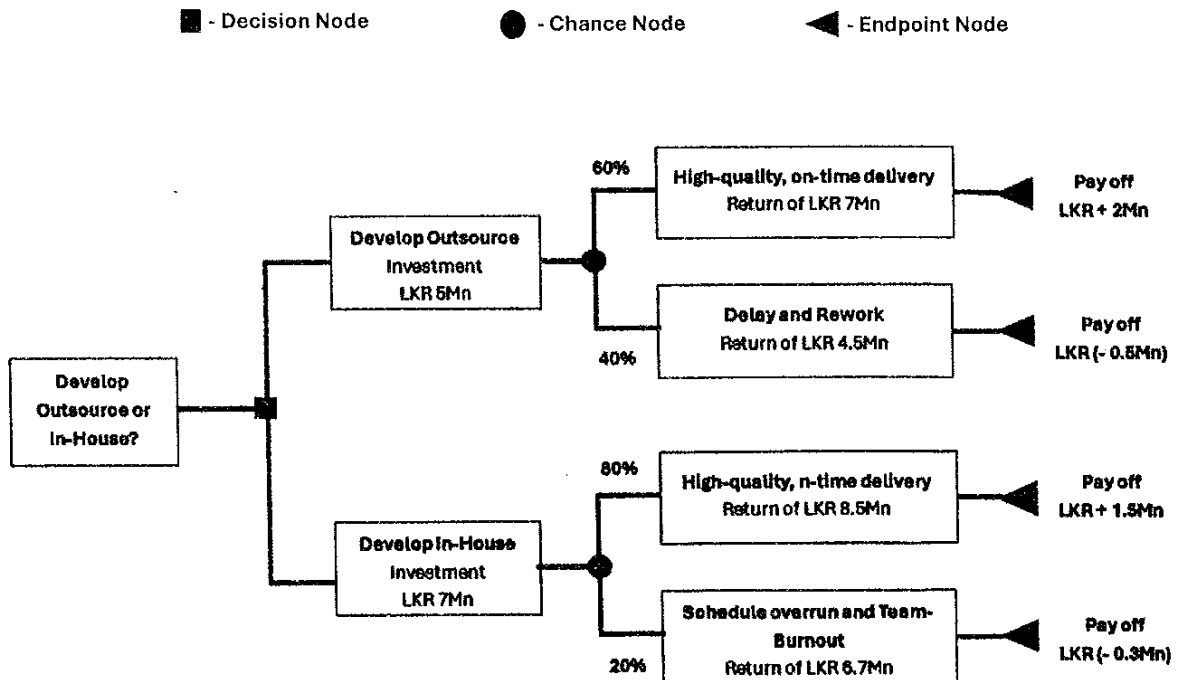
Q6

i. What is the *role of procurement management* in *ensuring timely delivery* of third-party components for the ISMS?

ii. Describe what is a **Request for Proposal (RFP)** in procurement management?

iii. Explain how the *stakeholder engagement plan* helps align internal project teams and the telecom client's expectations.

iv. ABC Tech Solutions must decide whether to *outsource the development* of the **Reporting & Analytics (RA) module** to an external vendor or to develop it *in-house*. The project team has prepared the following estimates:

Outsource: *60% chance* of high-quality, on-time delivery leading to a pay-off of LKR +2Mn and 40% chance of delay and rework, causing a pay-off of LKR - 0.5Mn.

In-House: 80% chance of acceptable-quality, on-time delivery with a pay-off of LKR +1.5Mn 20% chance of schedule overrun and team burnout, resulting in a pay-off of LKR – 0.3Mn.

    a. Calculate the **Expected Monetary Value (EMV)** for both options.

    b. Based on your analysis, *which option should* ABC Tech Solutions *choose*, and *why*?

■ - Decision Node   ● - Chance Node   ◄ - Endpoint Node

Decision tree:

- **Develop Outsource or In-House?**
  - **Develop Outsource Investment LKR 5Mn**
    - 60% → High-quality, on-time delivery Return of LKR 7Mn → Pay off LKR + 2Mn
    - 40% → Delay and Rework Return of LKR 4.5Mn → Pay off LKR (- 0.5Mn)
  - **Develop In-House Investment LKR 7Mn**
    - 80% → High-quality, n-time delivery Return of LKR 8.5Mn → Pay off LKR + 1.5Mn
    - 20% → Schedule overrun and Team-Burnout Return of LKR 6.7Mn → Pay off LKR (- 0.3Mn)