

A

**Department of Computer Science and Engineering
Green University of Bangladesh
Midterm Examination, Fall 2024
CSE 403, Information System and Design**

Total Marks: 30

Duration: 1.5 Hours

Answer all of the following questions.

(The CO# along with each sub-question represents the mapping of the questions onto the expected outcomes of the course provided in the course outline.)

Question 1.

a. Explain how computer-aided software engineering (CASE) tools can improve system development. **[CO1 3 Marks]**

b. Explain the key reasons why companies choose to outsource software development rather than relying on in-house development. How do these reasons impact the company's overall operational efficiency? **[CO1 3 Marks]**

c. Discuss how to evaluate off-the-shelf software in case of information system and design. **[CO1 3 Marks]**

d. Discuss the evaluation criteria used in classifying and ranking projects. How does each criterion impact the decision-making process for project selection? **[CO1 4 Marks]**

-OR-

Suppose your company named Pine Valley Furniture is undergoing a corporate strategic planning process. The board has asked you to review the company's mission statement, which clearly outlines the business it operates in, and the objective statement, which details the company's qualitative and quantitative goals for future success. In this scenario, how would you differentiate between the mission statement and the objective statement? Compare and contrast them. **[CO1 2 Marks]**

e. Identify the main phases of the Rational Unified Process (RUP). **[CO1 2 Marks]**

Question 2.

a. A multinational corporation aims to enhance its market presence in Asia. The leadership team analyzes current market trends and competitor strategies, assessing their existing operations. It creates a five-year strategic plan to transform into a future enterprise, with objectives such as increasing market share by 15%, launching localized products, and forming partnerships with regional distributors. Identify the steps of corporate strategic planning illustrated in the scenario. **[CO2 3 Marks]**

b. Assume you have a project with nine activities labeled from A to I as shown in the table. **[CO2 1+2+2 Marks]**

Activity	Optimistic time(o)	Most likely time(r)	Pessimistic time(p)	Predeces-sors
A	2	3	4	-
B	0.5	1	3	A
C	1	2	6	B, C
D	4	5	4	G
E	2	3	2.5	D
F	1.5	2	4	E, F
G	2	3	6	F, G
H	4	5	6	G, H
I	5	4	-	-

Date: 06/09/2024

- Estimate the task duration.
- Demonstrate a network diagram for the tasks that have been shown in the above table.
- Find the critical path from the diagram by calculating each activity's ES, EF, LS, LF.

-OR-

A software development company starts a web application project, which includes phases like requirements gathering, design, development, testing, and deployment. Initially, the team conducts detailed meetings with stakeholders to define functionalities and create a comprehensive three-month project plan. As development progresses, they shift to a broader focus, reducing planning detail and adapting to user feedback while ensuring alignment with project goals.

Determine how the level of project planning detail should be managed throughout the project life cycle in the context of this web application and why it is important to maintain high detail in the short term and reduce it as time goes on. Provide a proper graphical representation to support your answer.

c.

A software development team is working on an e-commerce application. During the project, they realize that they can reuse a payment gateway module they developed for a previous project. The module includes core functionalities like processing payments, handling refunds, and transaction reporting. However, the module requires minor modifications to meet the specific needs of the current project, such as supporting an additional payment method and integrating with a new user interface.

CO2 1+2+1 Marks

- Identify the approaches to Reuse.
- As a project manager, how would you justify the decision to reuse the existing payment gateway module in the current project?
- Consider the potential benefits and challenges of reusing software components in your response.

d.

A technology company aims to improve its project management system. The executive team first conducts meetings to establish high-level goals and essential features. Meanwhile, project managers identify specific issues they face, like difficulty tracking tasks, and propose detailed solutions based on their experiences. Determine the planning method used by the executive team and the project managers. Justify your answers.

CO2 3 Marks

End of Question