

BINDURA UNIVERSITY OF SCIENCE EDUCATION

DEPARTMENT OF COMPUTER SCIENCE

BSc IN COMPUTER SCIENCE/INFORMATION TECHNOLOGY HONOURS DEGREE

SWE216/CSH217/CS404: SOFTWARE PROJECT MANAGEMENT

2 HOURS 30 MINUTES

INSTRUCTION TO CANDIDATES

Answer all questions.

Total marks are 100.

APR 2025

Question 1

Case Study: Developing a New E-commerce Platform

Your company has decided to develop a new e-commerce platform to compete in the online retail market. The project involves creating a user-friendly website, integrating with various payment gateways, and ensuring a seamless shopping experience.

Questions:

- i. Identify key stakeholders in this project? [3]
- ii. Explain how would you conduct a feasibility study for this project? [2]
- iii. State the potential risks involved in this project, and how would you mitigate them? [2]
- iv. Develop a Work Breakdown Structure (WBS) for the project. [4]
- v. Create a Gantt chart to visualize the project timeline. [2]
- vi. Suggest how would you estimate the resources required for the project? [2]
- vii. Identify project management tools and techniques would you use to track project progress? [2]
- viii. Explain how would you handle scope creep and changes to project requirements? [3]

Question 2

- a. To address many of the problems particular to software projects non-conventional methodologies such as scrum and extreme programming were created. Compare and contrast these methodologies with reference to their strengths and weaknesses. [8]
- b. Explain the following four quantitative factors that are used for project selection, which tend to focus on cost and explain each one of them with the help of an example.
- i. Benefit-Cost Ratio (BCR) [4]
 - ii. Present Value (PV) [4]
 - iii. Net Present Value (NPV) [4]
 - iv. Payback Period (PP) [4]

Question 3

- a. Describe briefly how you transform a WBS into a Network Diagram. [2]
- b. Draw a network diagram for the set of activities in Table 1 using the A-O-N method. [8]

Activity	Predecessors	Duration in working days
A	Start None Project	5
B	A	15
C	A	5
D	A	10
E	C and D	15
F	B and E	5
G	F	

Table 1. Activities

- c. Explain in detail the Critical Path using a practical example and demonstrate ways of speeding up the schedule whilst defining the term "Crashing". [7]
- d. Suggest actions that can be taken if the schedule control process shows schedule slippage? [3]

Question 4

Case Study: Developing a New Mobile App for a Financial Institution

A financial institution has recently launched a new mobile banking app. The app aims to provide customers with convenient access to their accounts, bill payments, and other financial services.

- a. Suggest how would you measure the app's performance in terms of response time, load time, and stability? [3]
- b. Suggest tools or techniques would you use to identify and address performance bottlenecks? [3]
- c. Outline testing techniques would you use to identify and fix bugs or errors? [3]
- d. Explain would you evaluate the app's scalability to handle increasing user loads? [3]
- e. What design principles would you consider ensuring a positive user experience? [3]
- f. How would you assess the app's vulnerability to security threats like hacking, malware, and data breaches? [3]
- g. Suggest security testing techniques would you use to identify and address security vulnerabilities? [2]

Question 5

- a. In procurement management source selection is the process of applying evaluation criteria to bids or proposals to select a supplier. Construct a list of attributes for potential suppliers and describe a simple evaluation process that uses these attributes to select a supplier. [6]
- b. Define Risk Planning. Describe Risk identification, Risk Probability and effect, and Risk Response strategy. [4]

- c. It is often said that the most difficult projects to manage are those that involve organisational change and behavioural change. The successful development and implementation of a project management methodology requires the identification of the most common causes of change and identification of ways to overcome resistance to change. Construct a generic list of reasons for why resistance to change occurs on projects. In each case provide a mechanism to help overcome the resistance. [10]

****END OF PAPER****