INTERNATIONAL UNIVERSITY OF EAST AFRICA
'Learning to Succeed'

FACULTY OF SCIENCE AND TECHNOLOGY

END OF SEMESTER EXAMINATIONS - AUGUST 2025

PROGRAMME: BSSE
YEAR/SEM: YEAR 3/SEMESTER 2
COURSE CODE: GMT2101
NAME: PROJECT PLANNING AND MANAGEMENT-FST

DATE:
TIME:

INSTRUCTIONS TO CANDIDATES:

SECTION A

Write short and precise answers – Answer all Questions

Question 1:

a) Briefly explain software as a product. **(4 Marks)**

b) List the characteristics of Software. **(4 Marks)**

c) Describe software project management. **(4 Marks)**

d) Explain the need for software project management. **(4 Marks)**

e) Briefly explain the four 'P's of Project Management. **(4 Marks)**

f) Describe resources for software Project Management. **(4 Marks)**

g) Define Project scope. **(4 Marks)**

h) Describe the Software Project Management (SPM) process. **(4 Marks)**

i) The English word process means a particular method of doing something, generally involving a number of steps or operations. List some of the process models. **(4 Marks)**

j) Describe software estimation models. **(4 Marks)**

Question 2:

a) List the benefits of outsourcing software as a product. **(4 Marks)**

b) Briefly explain the Risk Control Strategy Issues. **(4 Marks)**

c) Briefly explain Software Project Scheduling as applied in project management. **(4 Marks)**

d) List Scheduling Methods in project management. **(4 Marks)**

e) List the benefits of the Program Evaluation and Review Technique (PERT). **(4 Marks)**

f) Differentiate between Program Evaluation and Review Technique (PERT) and Critical

Path Method (CPM). **(4 Marks)**

g) List the Limitations of Critical Path Method (CPM). **(4 Marks)**

h) Briefly explain the factors to consider when Tracking a Project. **(4 Marks)**

i) List the Project Tracking Techniques. **(4 Marks)**

j) Briefly explain the qualities of a good project manager. **(4 Marks)**

SECTION B

Long Essay - Answer any 3 Questions

Question 1:

a) Discuss the COCOMO model. **(4 Marks)**

b) You are a project manager at a software development company that is planning to undertake a new project to develop a web-based e-commerce platform. To estimate the project cost and schedule, you decide to use the COCOMO model, which categorizes projects into different types based on their characteristics.

i. List the project COCOMO category that best fits your e-commerce platform development. **(6 Marks)**

ii. Explain the COCOMO Pros and Cons. **(10 Marks)**

Question 2:

a) List the Evaluating Cost Models Criteria. **(4 Marks)**

b) You are the project manager for a software development project aimed at creating a new customer relationship management (CRM) system for a mid-sized company. As part of the project, you need to procure various software tools and services, including development frameworks, third-party APIs, and cloud hosting services. To ensure a successful procurement process, you decide to follow specific guidelines for buying

i. List the guidelines for Buying. **(6 Marks)**

ii. Explain the factors for Make-or-Buy Decision in project management. **(10 Marks)**

Question 3:

a) what is Outsourcing. **(4 Marks)**

b) You are the project manager for a tech startup that is developing a mobile application aimed at enhancing user engagement for fitness enthusiasts. As the project progresses, you face challenges related to resource

constraints, tight deadlines, and the need for specialized skills in areas such as user interface (UI) design and backend development. To address these challenges, you consider outsourcing certain components of the project.

Briefly explain the reasons for Outsourcing. **(16 Marks)**

Question 4:

a) Define and estimate the resources for a project. **(6 Marks)**

b) Describe the software metrics. **(6 Marks)**

c) Explain project cost estimation techniques. **(8 Marks)**

Question 5:

a) Explain the software project planning objectives. **(4 Marks)**

b) You are the project manager for a nonprofit organization that is launching a new community outreach program aimed at providing educational resources and support to underprivileged youth. As you prepare to initiate the project, you recognize the importance of following a structured planning process to ensure its success.

i. Explain the stages of planning in project management. **(8 Marks)**

ii. Explain the factors affecting planning. **(8 Marks)**

Question 6:

a) Briefly describe the project scope. **(6 Marks)**

b) List the types of resources used in project management. (7 Marks)

c) You are the project manager for a software development company that has been contracted to create a new inventory management system for a retail client. As part of the project initiation phase, you need to estimate the size of the

software project to provide an accurate timeline and budget. To do this, you consider various approaches to size estimation.

Explain the approaches that help to Estimate the Size of software Projects. **(7 Marks)**

Question 7:

a) List the factors used to calculate Function points. **(4 Marks)**

b) Explain the advantages of Function Points (FPs). **(10 Marks)**

c) You are the project manager for a software development project aimed at creating a new online banking application. To estimate the size of the project,

you decide to use Function Point Analysis (FPA). You have gathered the necessary information to calculate the Unadjusted Function Count (UFC) = 50 counts and the Technical Complexity Factor (TCF) = 2 counts.

Calculation the FP. **(6 Marks)**

Question 8:

a) List some of the Risk Components. **(4 Marks)**

b) List the two Risk Projection rates. **(8 Marks)**

c) You are the project manager for a software development project aimed at creating a

new mobile application for a healthcare provider. As part of your risk management process,

you need to assess the potential risks associated with the project and calculate

the Risk Exposure (RE) for each identified risk. Given the probability of occurrence of risk (p)=10 and the cost to the project should the risk occur (c)=5.

Calculate the Risk Exposure (RE). **(8 Marks)**

where,

RE = Risk Exposure

P =Probability of occurrence of risk

C =Cost to the project should the risk occur

Question 9:

a) Explain the phases of a project. **(6 Marks)**

b) Explain the steps involved in creating a project plan. **(6 Marks)**

c) Explain the step followed in the process of the Work Breakdown Structure (WBS). **(8 Marks)**

Question 10:

a) Briefly explain the Business Impact Parameters. **(6 Marks)**

b) List the development environment checklist in project management. **(6 Marks)**

c) List the Technology Parameters Checklist in project management. **(8 Marks)**

Question 11:

a) Briefly define risk as based in project management. **(4 Marks)**

b) Differentiate between reactive and proactive risk strategies. **(10 Marks)**

c) List the categories of Software Risks. **(6 Marks)**

Question 12:

a) List the Risk Item Checklist in project management. **(6 Marks)**

b) List the Product Size Checklist in project management. **(6 Marks)**

c) Briefly explain how Customer Characteristics are determined. **(8 Marks)**