



# MACHAKOS UNIVERSITY

University Examinations for 2022/2023

## SCHOOL OF ENGINEERING AND TECHNOLOGY

### DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

#### THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR

#### BACHELOR OF SCIENCE (COMPUTER SCIENCE)

#### SCO302: SOFTWARE PROJECT MANAGEMENT

**DATE:**

**TIME:**

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#### **INSTRUCTIONS:**

**Attempt Question One and Any Other Two questions in this paper**

#### **QUESTION ONE (COMPULSORY) (30 MARKS)**

- a) Distinguish between program and portfolio as used in project management (4 marks)

A program is a group of related projects that are organized in a coordinated way while a portfolio is a collection of projects and programs that are organized in a coordinated way

- b) State THREE applications that can be used to manage projects. (3 marks)

- Microsoft project

- c) Discuss project quality management in the context of Computer Science Projects.

(6 marks)

- Quality planning- involves activities taken to ensure a project meets its objectives
- Quality control- ensuring there is steady supply of the product
- Quality assurance- activities done to ensure the project satisfies the standards set

- d) Internal human resource plays a key role in the success of projects. However, sometimes

project managers prefer to outsource personnel and tools to ensure the success of the project. Explain THREE circumstances under which this happens. (6 marks)

- If they want to share the cost
- If they lack skilled expertise
- if they lack adequate resources
- if they don't want to be fully held accountable

e) Consider a project to develop an enterprise resource planning system whose main activities have been identified and coded as follows: -

<b>Activity</b>	<b>Preceding Activity</b>	<b>Activity Duration (days)</b>
A	-	5
B	-	6
C	A	4
D	A	5
E	B	2
F	B	5
G	C, E	4
H	C, E, F	6

- i. Design a well labeled GANTT chart for the above project. (8 marks)
- ii. Determine the critical path. (3 marks)

## **QUESTION TWO (20 MARKS)**

- a) Analyze the triple constraint of project management. Use a well labelled diagram to illustrate the concept. (8 marks)
- Cost
  - Scope
  - Time
- b) Explain three reasons why most high level projects like construction of the Standard Gauge Railway and the Nairobi Expressway have been awarded to non-locals. (6 marks)
- c) Explain three projects in the field of computer science that can be embedded on the Nairobi Expressway project. (6 marks)

**QUESTION THREE (20 marks)**

- a) Explain why a PERT chart is preferred to a GANTT chart in project planning.(6 marks)
- b) Explain three elements of organizational strategic management that apply to project management. (6 marks)

c) Discuss procurement management as a knowledge area in project management.(8 marks)

**QUESTION FOUR (20 MARKS)**

- a. Define risk management (2 marks)
- Ability to identify analyze and respond to a risk efficiently so as to ensure the project meets its objectives
- b. Discuss four steps involved in risk management as applied in project management. (8 marks)
- Risk identification
  - Risk control and monitoring
  - performing qualitative analysis
  - performing quantitative analysis
  - Planning risk responses
- b. Explain THREE qualities of a project manager. (6 marks)
- Observe the scope, time and cost elements
  - Conflict resolution
  - Have leadership skills
- c. State FOUR reasons why a project may fail. (4 marks)
- If the project scope, time and cost are not met
  - Poor planning
  - Poor management
  - Inadequate resources
  -

**QUESTION FIVE (20 MARKS)**

- a. Explain FOUR roles of the project team in project management. (8 marks)
- To ensure the project meets its objective
  -
- b. Discuss three stakeholders in an IT project. (6 marks)
- Sponsors

- Manager
- Support staff
- users

c. You are part of the team undertaking a project to implement an ERP system at the Kenya Prisons Service. Explain THREE reasons why it would be important for you to understand the strategic plan for Kenya Prisons.

(6 marks)