

The
Management
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UNDERGRADUATE UNIVERSITY EXAMINATIONS
SCHOOL OF MANAGEMENT AND LEADERSHIP
DEGREE OF BACHELOR OF BUSINESS INFORMATION
TECHNOLOGY

BBIT 201: SYSTEM ANALYSIS AND DESIGN

DATE: 2ND APRIL 2026

DURATION: 2 HOURS

MAXIMUM MARKS: 70

INSTRUCTIONS:

1. This paper contains **SIX (6)** questions.
2. Question **ONE** is compulsory.
3. Answer any other **THREE** questions.
4. Question **ONE** carries **25 MARKS** and the rest carry **15 MARKS** each.
5. **Save all work in one folder named: BBIT201_APR26_AdmissionNo**
6. This is a **practical examination**. All work must be done on the computer.

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

A county government office handles public service requests such as business permits, land inquiries, building approvals, and public complaints. Citizens submit requests by visiting offices, calling clerks, or sending emails to different departments. Requests are recorded manually in notebooks and personal Excel files maintained by individual clerks. There is no standard format for capturing request information, leading to duplication, missing records, and inconsistent data.

Each department processes requests independently. There is no centralized way to track request status, responsible officers, or processing timelines. Supervisors rely on verbal updates to monitor progress, which often results in delays and poor accountability.

The county government plans to introduce a computerized Service Request Management System to improve transparency, efficiency, and service delivery. However, the county faces challenges such as limited ICT infrastructure, varying computer skills among staff, and resistance to change.

You have been engaged as a systems analyst to analyse the current situation and design the proposed system.

Required:

A. Identify:

- i. Major problems in the current system
- ii. Root causes of the problems
- iii. Effects on citizens and county operations **(7.5 Marks)**

B. Design the following requirements elicitation tools:

- i. One interview guide
- ii. One questionnaire
- iii. One observation checklist **(7.5 Marks)**

C. Design a use case diagram showing

- i. Citizens
- ii. Clerks
- iii. Supervisors
- iv. ICT Officer

(10 Marks)

QUESTION TWO

- a) Draw a Level 1 DFD for service request processing. **(5 Marks)**
- b) Explain how poor process design contributes to delays and inefficiency. **(5 Marks)**
- c) Propose system-based improvements to enhance service delivery. **(5 Marks)**

QUESTION THREE

- a) Identify key entities and their attributes. **(5 Marks)**
- b) Draw an Entity Relationship Diagram (ERD) showing:
 - i. Relationships
 - ii. Cardinalities
 - iii. Primary keys **(5 Marks)**
- c) Explain how your database design avoids data duplication. **(5 Marks)**

QUESTION FOUR

- a) Design a dashboard for county staff. **(5 Marks)**
- b) Illustrate how users move between system screens. **(5 Marks)**
- c) Justify your interface and navigation choices. **(5 Marks)**

QUESTION FIVE

- a) Recommend a suitable system conversion strategy and justify your choice. **(5 Marks)**
- b) Prepare a brief training schedule for system users. **(5 Marks)**
- c) Identify implementation risks and propose mitigation measures. **(5 Marks)**

QUESTION SIX

Using the County Service Request Management System case study:

- a) Define measurable indicators that management can use to assess whether the new system is successful. **(5 Marks)**
- b) Propose post-implementation evaluation activities to assess system performance and user satisfaction. **(5 Marks)**
- c) Explain how feedback from users and system reports can be used to continuously improve the system over. **(5 Marks)**