



*Republic of Rwanda
City of Kigali*



GASABO DISTRICT

DISTRICT COMPREHENSIVE ASSESSMENT, RTQF LEVEL... 2023-2024

SECTOR: ICT AND MULTIMEDIA

TRADE: SOFTWARE DEVELOPMENT

MODULE CODE: SWDBS401

MODULE NAME: BACKEND SYSTEM DESIGN

DATE OF EXAM: 13/03/2024

DURATION: 3 HOURS

SCHOOL YEAR: 2023-2024

TERM: 2

Instructions:

- | | |
|---|------------|
| 1. Attempt all questions in section A | (55 Marks) |
| 2. Attempt three questions in section B | (30 Marks) |
| 3. Attempt one question in section C | (15 Marks) |

Section A: Attempt all questions/55 MARKS

Q1. Define a) Entity-Relationship diagram(ERD) /2marks

b) Data flow diagram(DFD) /1marks

Q2. Explain the element of Data flow Diagram(DFD) and Discuss about the rules of drawing Data flow Diagram(DFD) /5marks

Q3. a) Define system Interaction /1marks

b) Explain the main component of system interaction /3marks

Q4. Distinguish back-end and front-end development, and give at least 2 examples for Each. /4marks

Q5. Answer **True(T)** Or **False(F)**

i. Front-End Development Develop the Invisible structure that helps websites function properly? /1marks

ii. Back-End Development is included by the user interface, layout and fonts? /1marks

iii. Do you think System Development Life Cycle (SDLC) models is tools that you can use to better deliver your software project? /1marks

Q6. Define a) User Documentation /1marks

b) Normalization /1marks

Q7. Define the following term and give example for each

a. Database /1marks

b. Server /1marks

c. A system /1marks

d. Application Programming Interface (API) /1marks

Q8. Discuss about key component of system documentation. /3marks

Q9. Define JSON (JavaScript Object Notation) and Operating System. /3marks

Q10. Compare Hardware and Software and Give example for Each. /2marks

Q11. List and explain the types of documentation of system design. /5marks

Q12. Explain the five criteria followed in software development. /3marks

Q13. Outline the requirements needed in software project. **/4marks**

Q14. Define operating system and give the function of operating system. **/4marks**

Q15. Discuss about framework and library. **/2marks**

Q16. Answer **True(T)** Or **False(F)**

- a)** Functional Specification Document (FSD) is a comprehensive document that outlines the detailed functionalities and features of a software system? **1marks**
- b)** Interface Design Document, specifies how different system components or modules interact with each other? **/1marks**
- c)** Maintenance and Support Documentation is visual representation of how data flows through the system process, datastores, and external entities? **/1marks**

Q17. Choose the correct answer:

- a) Process applied to ensure data integrity and reduce redundancy in database and to organize data which is un-organized. **/1marks**
 - I. Documentation
 - ii. Normalization
 - iii. Data Flow Diagram

Section B: Attempt any THREE questions/30MARKS

Q18. a. Discuss about the key aspects of the backend. **/ 5marks**

b. Give at least five advantages of back-end. **/5marks**

Q19.a) Define system documentation. **/5marks**

b) Differentiate System Architecture Documentation and Functional Specification Document. **/5marks**

Q20. Explain the phase in object-oriented software development and give one Advantage and one disadvantage of object-oriented analysis and design. **/10marks**

Q21. a) Explain Tools/Techiniques/Methos used for data Collection. /5marks

b) Discuss about System Developing life cycles (SDLC) models. /5marks

Q22. Discuss about five criteria followed in software development. /10marks

Section C: Attempt ONE question/15MARKS

Q23.Using Diagram Illustrate and explain the system development life cycle(SDLC) Phases. /15marks

Q24. Out line the Implementation stage for drawing Structure system analysis and design methods(SSADM). /15marks

GOOD LUCK!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!