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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR**  
**FIRST YEAR, SECOND SEMESTER EXAMINATION**  
**FOR THE DIPLOMA IN INFORMATION & COMMUNICATION TECHNOLOGY**  
**DIT 1005 – SYSTEM ANALYSIS & DESIGN**

Date: 12<sup>TH</sup> April 2024  
Time: 2:30PM – 4:30PM

**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- Describe the concept of System Analysis citing why it is a crucial phase in the system development life cycle (SDLC) (6 Marks)
- Discuss the importance of understanding business requirements before starting the system analysis and design process. Provide examples to support your explanation (6 Marks)
- Explain how the key objectives of system analysis contribute to the successful development of information systems (6 Marks)
- Using examples of different types of feasibility studies explain the role of feasibility study in system analysis and design (6 Marks)
- Using a well labeled diagram describe the elements of an information system (6 Marks)

**QUESTION TWO (20 MARKS)**

- Compare and contrast structured analysis and object-oriented analysis based on the strengths and weaknesses of each approach (6 Marks)
- Discuss key techniques employed in requirement gathering during system development process (6 Marks)
- Describe how the process of data modeling in system analysis helps in understanding and representing the data requirements of a system (8 Marks)

**QUESTION THREE (20 MARKS)**

- Discuss the importance of user interface design in system development, and outline the key principles that should be considered when designing user interfaces (8 Marks)
- Examine the role of prototyping in the development of effective and user-friendly systems (6 Marks)
- In system development V-Model is one of the methodologies that can be employed to ensure a suitable and user-friendly system is developed. Outline its clear merits over the waterfall methodology (6 Marks)

**QUESTION FOUR (20 MARKS)**

- Compare Waterfall model and agile methodology in system development. Highlight the advantages and disadvantages of each approach (8 Marks)
- Discuss the roles and significance of industry-standard tools in system development. Provide examples of such tools (4 Marks)
- Citing key types of testing, examine the importance of system testing in ensuring the quality and reliability of the developed system (8 Marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain how system analysts can address and mitigate system performance issues during the development process (8 Marks)
- b) Describe what metrics and methods can be used to assess the efficiency and effectiveness of a developed system (4 Marks)
- c) Discuss how organizations can implement feedback and lessons learned from previous projects to enhance future system development processes (8 Marks)