KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE BACHELOR OF BUSINESS INFORMATION TECHNOLOGY
KBI 2204 – OBJECT ORIENTED DESIGN PROGRAMMING

Date: 11TH AUGUST 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS
QUESTION ONE (30 MARKS)

1. Kenneth is the software manager of Kenatco enterprises which is a retail company. He wants to develop a new online shopping system. The online shopping system should enable customers to be able to browse products, add items to their cart, and complete the purchase process.

   i) Discuss the methodology that he should use to develop the   system that would meet the customer's requirements. (2 Marks)

   ii) Explain 4 examples of the functional and nonfunctional requirements that the online shopping system should have? (4 Marks)

   iii) Explain how he should design the user interface to ensure a smooth shopping experience? (5 Marks)

   iv) Using 5 relevant examples, discuss the necessary security measures that he should consider so as to protect the customer's data and financial transactions? (5 Marks)

2. Rwanda Telkom wants to develop a mobile application for their customers so that they can access their services. Describe the different phases of the Systems Development Lifecycle Cycle that would be involved in developing this application. (4 Marks)

3. Dawapharm healthcare organization is planning to implement a new electronic health   record (EHR) system. Discuss 5 testing activities that should be conducted during the SDLC of this project. (5 Marks)

4. Softa Ltd uses internet and an electronic commerce website to connect to its customers and suppliers, and to capture data and share information about sales orders and purchases. Videoconferencing and electronic mail services are also provided. Data generated by a soda manufacturing process are captured by sensors and processed by a computer that also suggests answers to complex manufacturing problems posed by a plant engineer. Managers and business professionals access reports on a periodic, exception, and demand basis, and use computers to interactively assess the possible results of alternative decisions.

Required;

   i) Discuss any five types of information systems being used at the Coca Cola Ltd. (5 Marks)

QUESTION TWO (20 MARKS)

a)   Kenya Open University wants to develop an e- learning system for its learning purposes.
  i)   Identify the key stakeholders involved in the analysis stage.   (5 Marks)
  ii)   Explain 5 factors that will guide the system requirements process.   (5 Marks)

b)   A government agency is planning to develop a citizen portal for various online services. Discuss the significance of user involvement and feedback throughout the SDLC for this project.

                                                                                          (5 Marks)

c)   A transportation company wants to integrate a real-time tracking system into their fleet management. Describe the deployment phase activities required to ensure a successful implementation.   (5 Marks)

QUESTION THREE (20 MARKS)

1.   A government organization is planning to develop a mission-critical software system.
  i)   Discuss why the waterfall model might be a suitable choice for this project, considering its characteristics and the nature of the project.   (5 Marks)
  ii)   Identify and explain the potential drawbacks or limitations of the waterfall model, especially in situations where requirements might change during the development process.   (5 Marks)
  iii) Compare and contrast the waterfall model with the incremental model, highlighting their differences in terms of project planning, customer involvement, and adaptability to changing requirements.   (5 Marks)
2.   Kencall Foundation is a non-profit organization. The Information technology manager is planning on   developing a donation management system.
  i)   Discuss how the analysis stage can help in identifying the user needs and ensuring that the system aligns with the organization's goals and processes.   (5 Marks)

QUESTION FOUR (20 MARKS)

1.   Kamau is a systems analyst for Seven Seas Technology Company. He has been tasked with developing a new e-commerce platform for a client. The client has a very specific set of requirements and wants the platform to be able to handle a large volume of traffic.
  i)   What steps would you take to ensure that the platform is scalable and meets the client's needs?   (5 Marks)
  ii)   Explain 5 feasibility tests performed on the e-commerce platform.   (5 Marks)
2.   A software development team is working on a complex project with rapidly changing requirements.
  i)   Explain how the principles of extreme programming, can help address the challenges of evolving requirements.   (5 Marks)
  ii)   Discuss the role of pair programming in XP and how it contributes to code quality and knowledge sharing within the team.   (5 Marks)

QUESTION FIVE (20 MARKS)

1. A hospital wants to upgrade its patient management system. The new system should allow staff to schedule appointments, manage patient records, and generate reports.
   i) Explain 5 features that you would include to improve the scheduling process for hospital staff? (5 Marks)
   ii) Describe how the system can ensure data privacy and comply with relevant healthcare regulations? (5 Marks)
2. A social media platform wants to improve its recommendation engine to provide more personalized content to its users. As a software engineer;
   i) Describe 5 strategies and technologies that you would consider to achieve this goal? (5 Marks)
   ii) Explain how would you measure the success of the new recommendation engine? (5 Marks)