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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, FIRST SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE
KCS 100 – FUNDAMENTALS OF COMPUTING

Date: 09TH AUGUST 2023
Time: 2:30PM – 4:30PM

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

a) Industrial revolution has led to the evolution of technology all over the world. Based on this, answer the following questions;

   i) Describe the five generations of computers and their respective timeframes.   (4 Marks)

   ii) Analyze the technological advancements that led to the transition from one generation to another.   (5 Marks)

   iii) Compare and contrast the primary features and capabilities of each computer generation.   (4 Marks)

b) Examine the role that ICT has played in each of the following sectors in Kenya, clearly explaining two challenges experienced and how they can be resolved.

   i) Real Estate   (2 Marks)

   ii) Transport   (2 Marks)

   iii) Agriculture   (2 Marks)

   iv) Tourism   (2 Marks)

   v) Banking   (2 Marks)

   vi) Health   (2 Marks)

c) Using 5 relevant examples, describe how adoption of Internet of Things (I.O.T) has been implemented in homes.   (5 Marks)

QUESTION TWO (20 MARKS)

a) Digital Divide in Education is an emerging issue in Kenya.

    i) Using 2 examples, explain how the digital divide affects students' access to technology and online resources for learning. (2 Marks)

    ii) Analyze the impact of the digital divide on academic performance and educational outcomes in different communities. (2 Marks)

    iii) Examine initiatives and programs aimed at reducing the digital divide in educational settings and their effectiveness. (2 Marks)

    iv) Discuss potential long-term consequences of the digital divide on students' future prospects and career opportunities (4 Marks)

b) Mr. Otieno owns a small fish business and is considering expanding its operations and leveraging the internet to reach a broader customer base.

    i) Analyze and discuss the potential benefits and challenges of using the internet for the business purposes for the business. (5 Marks)

    ii) Provide examples of successful businesses that have utilized the internet effectively and explore strategies for maximizing the benefits of online presence. (5 Marks)

QUESTION THREE (20 MARKS)

a) You are the Information Technology Manager of Kiriri Women's University of Science and Technology. You have been tasked with the role of procuring two hundred computers for the computer laboratory.

    i) Evaluate Five important considerations that you would take into account when purchasing the computers. (5 Marks)

    ii) Discuss how the above considerations align with the educational requirements and expectations of the students in the university. (5 Marks)

b) Social Intelligence is an emerging trend in the business community. Using Five examples, illustrate how social Intelligence has impacted businesses. (5 Marks)

c) The "Melissa" virus was a macro-based computer virus that emerged in March 1999. It targeted Microsoft Word documents and spread via email. It was distributed through infected Word document attachments sent via email. When users opened the infected document, the virus executed a macro that replicated the virus code and sent itself to the first 50 email addresses in the user's address book. The Melissa virus spread rapidly, overwhelming email servers and causing disruptions in email communications. It was estimated that the virus caused millions of dollars in damages due to lost productivity and the need for extensive cleanup efforts.

    i) Using 2 relevant examples, explain how the Melissa virus spread and replicated itself. (2 Marks)

    ii) Analyze the impact of the Melissa virus on email systems and productivity. (3 Marks)

QUESTION FOUR (20 MARKS)

a) "Bebapay" was a mobile payment system launched by Google in Kenya in 2013. It aimed to provide a convenient and efficient way for public transport users to pay for their fares using their mobile phones. Users could load money onto their Bebapay accounts and use Near Field Communication (NFC) technology to tap their phones on fare collection devices installed in public transportation vehicles. While the service had the potential to revolutionize public transport payments and improve the user experience, it faced some challenges and criticisms during its implementation:

  i) Using 5 relevant examples, describe reasons that might have caused the Bebapay system to fail. (5 Marks)

b) Matibabu hospital is implementing a new electronic medical record (EMR) system. Using Five relevant examples, analyze the organization's requirements for the system.

  i) Discuss Five benefits that doctors, nurses and patients will experience through using the new electronic medical record (EMR) system. (5 Marks)

c) You have been appointed to the new position of a manager in a medium sized agriculture company to spearhead the adoption of ICT enabled systems in the firm.

  i) Describe the various systems that you would suggest to support the firm's decision making process. (5 Marks)

  ii) Using appropriate examples, discuss how each support system is vital for the firm. (5 Marks)

QUESTION FIVE (20 MARKS)

a) Neema enterprises is a small startup business that specializes in selling fruits and vegetables. Mary, who is the founder is planning to adopt computer systems for the business's day to day operations.

  i) Using Five relevant examples, identify and discuss Five potential disadvantages and challenges that the business may face as a result of computerization. (5 Marks)

  ii) Using Five examples, discuss benefits that Neema enterprises will gain by adopting computer systems. (5 Marks)

b) Nestle limited is a multinational corporation that wants to establish a computer network infrastructure across its offices worldwide.

  i) Using Five relevant examples explain the purpose and benefits of computer networking for Nestle Corporation. (5 Marks)

  ii) Using Five relevant examples, illustrate how networking can enhance efficiency and collaboration within the organization. (5 Marks)