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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
<u>DIT 1008 – COMPUTER APPLICATIONS II</u>

Date: 11TH April 2024
Time: 11:30AM – 1:30PM

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

a)   John is the   financial manager of Faulu Bank. He uses the table below to calculate the employee's salary. Using the table below, answer the questions.

Employee No Job Group	Names	Date Employed	Basic Pay	Allowance	District
100109	Lewis	12/feb/10	15,791.00	4000.00	Kakamega
100208	Francis	23/dec/09	15,530.00	5000.00	Kakamega
100309	Edwin	05/jan/08	9,000.00	5000.00	Kisumu
100407	Francis	04/jun/07	12,400.00	7000.00	Nairobi
100509	John	06/jan/06	11,000.00	4000.00	Kitui
100610	Edward	07/july/05	10,000.00	3000.00	Kakamega

    i)   The Basic Pay is taxed at 8%.   Write a formula to calculate the basic pay.   (4 Marks)
    ii)   Calculate the Net pay of all the employees.   (6 Marks)

b)   An architectural firm is considering implementing CAD software for their design projects.
    i)   Using two relevant examples, discuss the advantages of using CAD in architectural design.
                                                                                                                                    (4 Marks)
    ii)   Discuss three examples of how CAD technology can streamline the creation of architectural blueprints and facilitate collaboration among architects, engineers, and clients.   (6 Marks)

c)   Artificial intelligence is an emerging trend and has been adopted by many financial institutions.
    i)   Discuss two advantages of AI-based fraud detection systems in banking institutions.   (4 Marks)
    ii)   Describe any three potential challenges that the banking institution may face while utilizing artificial intelligence   (6 Marks)

QUESTION TWO (20 MARKS)

a)   Using five examples, describe how emergency response agencies use GIS to coordinate disaster relief efforts, assess risk exposure, and plan evacuation routes.   (5 Marks)
    i)   Discuss two advantages of GIS in visualizing disaster scenarios, allocating resources, and communicating with the public.   (4 Marks)
    ii)   Discuss five challenges that one may encounter when using GIS to coordinate disaster relief
                                                                                                                                    (5 Marks)

b)   An automotive design company is leveraging CAD software to innovate new vehicle designs and streamline manufacturing processes.

c)   Discuss three advantages of using CAD in automotive design.   (6 Marks)

QUESTION THREE (20 MARKS)

a) A consumer electronics company is utilizing CAD software to develop new products.
   i) Using two relevant examples, discuss how CAD enhances the product development process.
   (4 Marks)
   ii) Using three examples, discuss the role of CAD in reducing time-to-market for consumer electronics and ensuring product quality while meeting consumer demands for innovation and functionality. (6 Marks)
   iii) Explain two application areas of Computer Aided Design (4 Marks)
b) A multinational corporation employs AI-powered chatbots to handle customer inquiries and support requests.
   i) Discuss three advantages of chatbots in improving response times and scalability. (3 Marks)
c) Discuss three limitations of chatbots in handling customer inquiries and support requests. (3 Marks)

QUESTION FOUR (20 MARKS)

a) You have been tasked with developing a geographic information system (GIS) for Thika road to optimize route planning, vehicle tracking, and fleet management.
   i) Using two relevant examples, explain how transportation companies can integrate GIS technology to their fleet. (4 Marks)
   ii) Using three examples, discuss the advantages of GIS in analyzing traffic. (6 Marks)
   iii) Explain two challenges related to the use of GIS in transportation logistics. (4 Marks)
b) Baraka Limited is a company that specializes in real estate. It has been using manual accounting processes for several years. They are considering transitioning to a computerized accounting system.
   i) Identify and discuss 3 uses of computerized accounting for the company. (6 Marks)

QUESTION FIVE (20 MARKS)

a) You are a doctor in Materi Hospital. For an overweight patient (150 Kg.) in January, make a table with the weight which they should reach every month, knowing that after 12 months, they must reach 80 Kg in December.
   i) Using five examples, discuss how to calculate the monthly percentage decrease of the weight.
   (5 Marks)
   ii) Using a table, show how to list the names of the months. The initial value of the weight should be (150) and the last month should have the final value of the weight which is (80) Kg. The difference between the original and final value must be distributed evenly. (5 Marks)
b) Ms Mwaniki is the human resource manager for Baraka group of companies. She would want to analyze the employee's data using Microsoft Excel.
   i) Using three examples, explain the capabilities of Excel for organizing and analyzing employee information. (6 Marks)
   ii) Using two relevant examples, discuss how Microsoft Excel's data manipulation features, such as sorting, filtering, and pivot tables, can be used to extract insights and make informed HR decisions. (4 Marks)