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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS, 2024/2025 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE)

KCS 2200 - OBJECT ORIENTED PROGRAMMING II

DATE: 11TH DECEMBER, 2024

TIME: 8:30AM-10:30AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE: COMPULSORY (30 MARKS)

- a) Using relevant examples, describe the following terms as used in object-oriented programming
 - i. Constructor (3 Marks)
 - ii. Encapsulation (3 Marks)
 - iii. Polymorphism (3 Marks)
 - iv. Inheritance (3 Marks)
- b) Citing relevant examples, clearly differentiate between Class and Object (3 Marks)
- c) Define the term “exception handling”, and write java code implementing zero division error exception handling (4 Marks)
- d) Write any program of your choice implementing if, else if and else statement in java (4 Marks)
- e) Using java code and results, clearly differentiate between while loop and do while loop (4 Marks)
- f) Describe applicable areas of java programming language (3 Marks)

QUESTION TWO: (20 MARKS)

- a) You have been hired by Equity Bank as a senior java developer, write a java program code to implement encapsulation in its ATM Machines transactions like deposit, withdraw and checking balance (10 Marks)
- b) Describe five importance of using encapsulation in object-oriented programming (5 Marks)
- c) Describe five advantages of object-oriented programming languages (5 Marks)

QUESTION THREE: (20 MARKS)

Upon completing your Bachelor degree in Computer Science, you have been hired as a senior java developer, to develop bank management system. The system will implement various object-oriented concepts

Class: Customers

Objects: Customer1, Customer2, Customer3

Required: Using the above provided details

- a) Write a java code implementing class with relevant attributes, constructors and methods (8 Marks)
- b) Write a java code implementing creation of the three objects and calling all the necessary methods (7 Marks)
- c) Describe the importance of constructors during object-oriented programming (5 Marks)

QUESTION FOUR: (20 MARKS)

- a) Explain the term “file handling”, write a java program to create KWUST .txt file and write /append text from user’s input. (10 Marks)
- b) Create two classes of your choice and implement inheritance in java (10 Marks)

QUESTION FIVE: (20 MARKS)

- a) Describe the following Java swing GUI components and write codes to implement them.
 - i. JFrame (3 Marks)
 - ii. JPanel (3 Marks)
 - iii. JLabel (3 Marks)
 - iv. JButton (3 Marks)
- b) Using below Java swing captured image, write java code that can be used to write and read both username and password. (8 Marks)

