



PAN AFRICA CHRISTIAN UNIVERSITY

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

END OF SEMESTER EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: DICT0125

CAMPUS: ROYSAMBU

COURSE TITLE: OBJECT ORIENTED PROGRAMMING

EXAM DATE: WEDNESDAY 7TH AUGUST 2019

TIME: 2:00PM-4:00PM

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other Three questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A

(Answer ALL questions in this section)

Question 1 :

- I. Define the following terms as used in object-oriented programming (6 Marks)
 - i. Polymorphism
 - ii. Encapsulation
 - iii. Inheritance
 - II. Write a java program to calculate salary, given basic pay = 10000, overtime rate hour = 200 and overtime hours = 50. The program should declare and initialize all the input variables, compute the salary in one expression and then display the result on the screen. (6 Marks)
 - III. With the aid of examples, differentiate the following control structures (6 Marks)
 - i. While
 - ii. Do.....While
 - iii. For
 - IV. Explain the output produced by the following code fragment (2 Marks)

```
String m1, m2, m3;  
int numberChars ;  
m1 = "Introduction to JAVA Programming"  
m2 = m1.toLowerCase( );  
numberChars = m1.length( );  
System.out.println(m2);  
System.out.println(numberChars);
```
 - V. Write a java code segment that declares an array and initializes it with the values: 34, 43, 51, 49, 31, 53, 20, 34, 62, 23 and thereafter display the values in reverse (5 Marks)
 - VI. Encapsulation can be achieved through either classes or interfaces:
 - i. Explain the term Interface (2 Marks)
 - ii. List THREE features of an Interface (4 Marks)
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SECTION B

(Answer any FOUR (4) questions in this section)

QUESTION 2:

- I. Differentiate the following terms as used in object oriented programming
 - i. Class and object (2 Marks)
 - ii. Next() and NextLine() (2 Marks)
- II. Jubilee Restaurant wants to automate its Gate Management System. You have been approached to write a simple program to determine whether the potential client is under age or an adult and give appropriate advice. Write down the probable code that you would provide. (6 Marks)

QUESTION 3:

- I. Explain in detail the meaning of the following line of code as used in a Java Program: `public static void main (String args[ ])` (6 Marks)
- II. Describe FOUR types of inheritance supported by a java program (4 Marks)

QUESTION 4:

Write a program that reads in the radius and length of a cylinder and computes its volume using the following formulas: (10 marks)

$$\text{area} = \text{radius} * \text{radius} * p$$
$$\text{volume} = \text{area} * \text{length}$$

QUESTION 5:

Write a program that reads ten numbers and store them in an array named my Numbers, computes their mean, and finds out how many numbers are above the mean and those below the mean. (10 marks)