BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF APPLIED SCIENCE AND ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE

BSc HONS DEGREE IN COMPUTER SCIENCE/SOFTWARE ENGINEERING/NETWORK ENGINEERING

CS102/SWE102/NWE102 -INTRODUCTION TO COMPUTER PROGRAMMING

DURATION: 3 HOURS   TOTAL MARKS: 100

INSTRUCTIONS TO CANDIDATES:

1. Answer ALL Questions   ≛ NOV 2024
2. Use the given answer sheet for answers.
3. Create a folder on the desktop where you will save your work with your registration number.
4. All programs to be written in Python.

SECTION A

Question 1

a) What is the output of the following code when executed?

me = "apples",

print(type(me))   [2]

b. Which precedence order is used in Python?   [2]

c) Write a code to enter the following marks ? marks= [78,89,92,68]   [4]

d) Write a python programme which shows that if temperature is between 96 and 98 it would display body is okay , if the temperature is between 99 and 103 it would show that a fever has been detected and if the temperature is from 103 to 106 the system should display rush to the hospital.   [8]

e) Write a program that prints the difference between a and b.   [4]

a = {1, 2, 3, 4, 5, 6}

b = {3, 4, 5}

Question 2

a) Given the following code snippet in Figure 1 below.

n =input("enter a positive number to continue")

n/0

print(n)

Figure 1: Code Snippet

Identify the type of error in the code.

[2]

b) Python's two working modes are : _____ mode and _____ mode   [2]

c. Write a python program which shows the sequence of a traffic light   [10]

e. Give application areas of python.   [6]

Question 3

    a. Write a python program which calculates interest given that the Principal was 10000zwl , T is 5 years and the rate is 15% per annum.
    [8]

    b. Write a program that declares a class Bank, initializes Bank constructor with accountNumber, accountName and balance. The initial balance should be 34500000ZWL.The class should have function deposit that sets balance = balance+ amount. The class should also have function display details to display accountNumber, accountName and balance before deposit. The accountNumber and accountName should be accepted from keyboard as well as the deposit. An object bankAcc should be created to invoke functions defined in class Bank. Program should display balance before and after deposit.   [12]

Question 4

a. Create a class called Car. The data fields must be the car's make, model and top speed. Write a constructor and the get and set functions for the class. Also, write a method that will determine the type of classification of the class. If the top speed is > 250 km then it is a Super Car, if the top speed is < 100km then it is a Jalopy otherwise it is a Family Sedan.   [10]

b. Create a program that asks the user to enter their name, surname, registration number, / programme, level and their age. Print out a message addressed to them

that tells them the year that they will turn 100 years old. Note: for this, the expectation is that you explicitly write out the year (and therefore be out of date the next year. [10]

Question 5

a. Create a class to store details of student like student no, name, course and fee paid so far. Assume courses are C++ and Python. Provide a constructor to take student, name and course and fee paid. The initial fee paid is initialized to zero. Your program should have inputs for student, name and course and fee paid. As well as have payment,display,owingsoffeespaid, displayowing functions. owingsoffeespaid functions should calculate owing based on 50000-fees paid.
[10]

b. Write a program that allow user to enter 7 temperatures as decimals. The temperatures should be stored in an array. The program should calculate average temperature, Reads in 7 temperatures and shows temperatures which are above and which are below the average of the 7 temperatures. [10]

THE END