PIONEER INTERNATIONAL UNIVERSITY

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UNIVERSITY SPECIAL EXAMINATIONS

ACADEMIC YEAR: 2021/2022   SEMESTER: JAN-APRIL 2022

CODE: BSIT 1020   UNIT: INTRODUCTION TO PROGRAMMING

DATE: APRIL 2022   TIME: 2 HOURS

Instructions:
   i.   Answer Question ONE AND ANY OTHER TWO QUESTIONS
   ii.   Write clearly and legibly

QUESTION 1   (TOTAL: 30 Marks)

a) Clearly explain what programming is and explain any three advantages it has in the life in an IT person?   (5 Marks)

b) By the use of a clear source code, extensively distinguish between:

   i.   Arithmetic and Relational operators   (4 Marks)

   ii.   Assignment and Increment/Decrement Operators.   (4 Marks)

   iii. Command operators and Logical   (4 Marks)

c) State and explain the five steps involved in problem solving.   (5 Marks)

d) Explain while distinguishing the meaning of the following terms.

   i.   Compiler and Algorithm   (4 Marks)

   ii.   Constant and variable   (4 Marks)

QUESTION 2   (TOTAL: 20 Marks)

a) With the help of a working source code, explain the three rules used when creating valid identifiers.   (3 Marks)

b) During the system life cycle of any system, why is Analysis necessary?   (4 Marks)

c) During feasibility study, the analyst has to evaluate both legal and economic feasibility. Extensively differentiate between the two using illustrative example.

                                                                         (4 Marks)

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d) Look at the code below.

```cpp
// drive.cpp : Defines the entry point for the console application.
#include "stdafx.h";

#include<iostream>
using namespace std
int main{
    float height,weight,teeth,education;
    string feet,bodystatus,fit,y;

    //weight=75; // Assignment operations
  cout<<"Welcome to the toughest Police Recruitment Drive, EVER!!\n";
  cout<< "Please enter your height\n" << endl;
   cin<<height;

        if (height >= 5.2 ){
                cout<<"Please enter your weight\n"
                cin>>weit;

            if (weight >=75){
                cout<<"Passed" <<endl;

                cout<<"Please your number of teeth\n" <<endl;
                cin>>tith;
                if(teeth==32){
                cout<<"Passed" <<endl;
                cout<<"What's your last class in high school?\n";
                        cin>>education;
                            if(education=4){
                                    cout<<"Welcome";
                            }
                            else{
                                    cout<<"Rudi shule";
                            }
                else{
                        cout<<"Kibogoyo" <<endl;
                }
            else{
                cout<<"Less Waight" <<endl;
                cout<<"Go away" <<endl;
            }
        else{
            cout<<height<<endl;

            cout<<"Go gym" <<endl;
        }
```

Grading Systems:

80-100 is A

60-79 is B

40-59 is C

Less than 40 is F

The output should be as shown below

```
Enter marks for 5 arbitrary subjects :
77
56
45
55
55

Your Total is 288
Your Mean is 57.6
Your Grade is C
```

b) Distinguish between primitive and user-defined data types in C++ Citing an example declaration in each case   (4MKS)

c) Write a program to calculate the volume of a cylinder   (6MKS)

QUESTION FOUR   (20 Marks)

a) Explain the following terminologies as used in object oriented programming   (6MKS)

   i. Function prototype

   ii. Arrays

   iii. Keywords

b) Discuss any two scope of variable as used in C++   (4MKS)

c) write a C++ program to display the days of the week when a user enters the numbers between 1 (Sunday)to 7(Saturday) using the switch case. If the user enters any other number outside the range, it should display the message "No such a day in the week"   (10MKS)

QUESTION FIVE   (20 Marks)

a) Write a program to declare a one dimensional array called numbers, initialize it with five arbitrary integer numbers and display the number on the console screen   (6MKS)

b) Declare two variable x and y and store them with values 3 and 2 respectively, Write a C++ program using math library function to calculate and display;   (6MKS)

   i. Results of raising the number in x with the value of y as shown (x^y)

   ii. The square root of x

c) Discuss any four programming paradigms   (8MKS)

~END~