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| **FACULTY OF ENGINEERING** | | | | | | | | | | | | | | | |
| **Test 2** | | | | | | | | | | | | | | | |
| **First Semester of 2021/2022** | | | | | | | | | | | | | | | |
|  | **COURSE NAME** | | | | **:** | | **COMPUTER PROGRAMMING** | | | | | | | | |
|  | **CODE** | | | | **:** | | **ENG3202 / ECC3005** | | | | | | | | |
|  |  | | | |  | |  | | | | | | | | |
|  | **PROGRAMME** | | | | **:** | **BACHELOR OF COMPUTER AND COMMUNICATION SYSTEMS ENGINEERING WITH HONOURS** | | | | | | | |  |
|  | **LECTURER** | | | | **:** | **DR. SITI BARIRAH AHMAD ANAS / MDM ROSLIZAH ALI** | | | | | | | |  |
|  | **DATE** | | | | **:** | **11 JANUARY 2022** | | | **VENUE** | | | **:** | **ONLINE** |  |
|  | **TIME** | | | | **:** | **9:00 to 11:00 AM** | | | **DURATION** | | | **:** | **2 HOURS** |  |
|  | **Instructions** | | | | **:** |  | | | | | | | | | |
|  | 1. | PART A: Answer ALL questions in the question booklet and upload your answer through PutraBlast.  (*BAHAGIAN A: Jawab SEMUA soalan dalam buku soalan dan muatnaik jawapan anda melalui PutraBlast.*) | | | | | | | | | | | |  |
|  | 2. | PART B: Answer ALL questions using C++ compiler and upload your answer through PutraBlast.  (*BAHAGIAN B: jawab SEMUA soalan menggunakan pengkompil C++ dan muatnaik jawapan anda melalui PutraBlast.*) | | | | | | | | | | | |  |
|  | **Name** | | **:** | **ALIFF NABIL IZZUDDIN BIN BADRUL HISHAM** | | | | | | | | | | | |
|  | **Matric No.** | | **:** | **210277** | | | | **Programme** | | **:** | **CCSE** | | | | |

**This paper consists of 6 pages including the front page**

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**PART A**

**Answer ALL questions in the answer section of this question paper.**

**You may verify your answer using C++ compiler.**

In the following program segments, state what type of error(s) presents (syntax, logic or run-time). Then, write the corrected program codes in the space provided.

[10 marks]

1. char name[10] = (‘n’, ‘a’, ‘j’, ‘i’, ‘h’, ‘a’, ‘h’);

float \*pName = name;

Answer:

* Syntax error
* Logic error

char name[10] = {‘n’, ‘a’, ‘j’, ‘i’, ‘h’, ‘a’, ‘h’};

float \*pName = &name;

1. for(int i=0, i>5, i++)

for(int j=1, j<i, j--)cout << i, cout <<endl;

Answer:

* Syntax error

for(int i=0;i>5;i++)

for(int j=1;j<I;j--)cout << I << cout <<endl;

1. int double (float &new, old);

{ \*new \*= \*old\*2;

\*old \*= 4; }

Answer:

* Logic error
* Syntax error
* Runtime error(due to assigning wrong pointer value)

int double (float &new, float &old)

{ \*new = \*old\*2;

\*old = 4; }

1. cout>> m>n?n<m?: “n is smallest”: “m is smallest”;endl;

Answer:

* Syntax error

**cout << m << n << n << m << "n is smallest : m is smallest "<< endl;**

1. int \*pArray;

int array[3] = {4, 3, 2, 1};

\*(array+2) = pArray;

cout << \*pArray;

Answer:

* Logic error
* Runtime error

int pArray;

int array[3] = {4, 3, 2};

\*(array+2) = &pArray;

cout << \*pArray;

1. int a=5, b=3.3;

switch(a>b){

case 1:cout<< a is greater than b;

case 2:cout<< b is greater than a;

default:invalid;

}

Answer:

* Logic error
* Syntax error

int main(){

int a=5, b=3.3;

switch(a){

case 1:

cout<< "a is greater than b";

case 2:

cout<< "b is greater than a";

default:

cout << "invalid";

}

}

1. int k=1, l=0;

do{

l++;

}while(k<5)

Answer

* Syntax error

int k=1, l=0;

do{

l++;

}while(k<5);

1. void guess(int clueless);

{

for (int count = 0; count < 8; x++)

cout << clueless[count];}

Answer:

* Syntax error
* Logic error
* Runtime error

void guess(int clueless[])

{

for (int count = 0; count < 8; count++)

cout << clueless[count];

}

1. for(i=0; i<SIZE; i++)

{ cout << ‘Enter number num[<<i<<]’;

cin >> num[];

}

Answer:

* Syntax error
* Logic error

int N,SIZE,i,num[]={};

for(i=0; i<SIZE; i++)

{ cout << "Enter number";

cin >> num[N];

}

1. int void getValue(int value\*)

{

cout >> “Enter a value: ”;

Cin << value;

}

Answer:

* Runtime error
* Logic error

void getValue(int \*value)

{

cout << "Enter a value:" ;

cin >> \*value;

}

**PART B**

**Solve the following problems using C++ compiler. Upload the .cpp files of each question through PutraBLAST.**

**Question 1**

Write a function named as **separatePosNeg** that will separate the positive and negative integer numbers stored in an original array into two new arrays, namely **positive** and **negative**, respectively. The function will then display the content of the two newly declared arrays. The main function reads 10 integers from the user and store them in the original array. It will then call the function **separatePosNeg** and pass the original array and its size as the arguments.

[10 marks]

**Question 2**

A mathematical piecewise function, is defined as:

Write a complete program that consists of a main function and a recursive function named as **funR**. The main function should ask for the value of from user, calls the recursive function **funR**, and displays the answer returned by that function.

[8 marks]

**Question 3**

The volume, V and area, A of a cylinder is given by:

Where r and h are the radius and height of the cylinder, respectively and is given as 3.14159265. Write a program that consists of four functions which are **main**, **input**, **compute** and **output**. **input** function prompts the user to input the height and radius of the cylinder, **compute** function will compute the volume and area of the cylinder and **output** function will display the computed results. **main** function will only call the other three functions. Do not use global declaration of variables in your program, only local declaration is allowed.

[12 marks]