

QUESTION NO # 01

The screenshot displays the Dev-C++ IDE interface. The main window shows a C++ source file named `Q_1.cpp` with the following code:

```
1 #include<iostream>
2 using namespace std;
3 int main (){
4     int a=1123;
5     float b=21.123;
6     char c='A';
7     void *pointer;
8     pointer = &a;
9     cout << "Adreess of int data type vaaiable using void pointer : "<< pointer<< endl;
10    pointer = &b;
11    cout << "Adreess of float datatype vaaiable using void pointer : "<< pointer<< endl;
12    pointer = &c;
13    cout << "Adreess of char datatype vaaiable using void pointer : "<< pointer<< endl;
14
15    return 0;
16 }
```

The output window, titled `C:\Users\HD\Desktop\Q_1.exe`, shows the execution results:

```
Adreess of int data type vaaiable using void pointer : 0x23fe44
Adreess of float datatype vaaiable using void pointer : 0x23fe40
Adreess of char datatype vaaiable using void pointer : 0x23fe3f

-----
Process exited after 0.05798 seconds with return value 0
Press any key to continue . . .
```

The compilation results window at the bottom shows the following details:

- Errors: 0
- Warnings: 0
- Output Filename: `C:\Users\HD\Desktop\Q_1.exe`
- Output Size: 1.83260917663574 MiB
- Compilation Time: 3.02s

The status bar at the bottom indicates the current line is 13, column is 34, and the file is 16 lines long with a total length of 440 characters. The system clock shows 4:08 PM on 12/28/2020.

QUESTION NO # 02

The screenshot displays the Dev-C++ IDE interface. The main window shows a C++ program in `Q2.cpp` that uses pointers to calculate the product and sum of four integers. The code is as follows:

```
1 #include<iostream>
2 using namespace std;
3 int main (){
4
5     int a[4];
6     int *p[4];
7     for (int i=0;i<4;i++){
8         cout << "Enter Values : ";cin>>a[i];
9         p[i]=&a[i];
10    }
11    cout << "Multiple array element using pointers : ";
12    cout << (*p[0])*(*p[1])*(*p[2])*(*p[3])<<endl;
13    cout << "Add the array elements using Pointers : ";
14    cout << (*p[0])+(*p[1])+(*p[2])+(*p[3])<<endl;
15    return 0;
16 }
```

A console window titled `C:\Users\HD\Desktop\Q_2.exe` shows the program's execution output:

```
Enter Values : 1
Enter Values : 2
Enter Values : 3
Enter Values : 4
Multiple array element using pointers : 24
Add the array elements using Pointers : 10

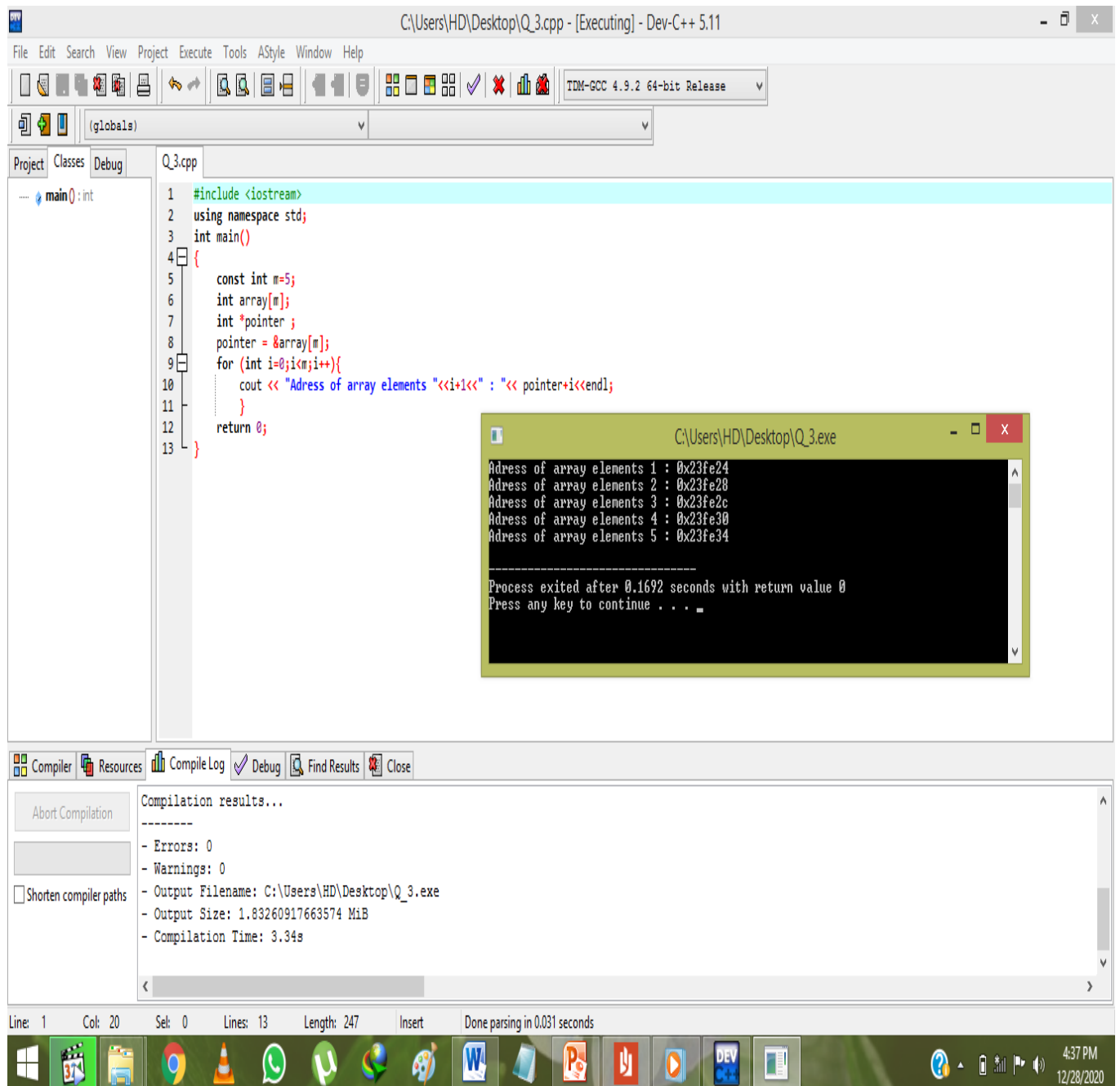
-----
Process exited after 2.492 seconds with return value 0
Press any key to continue . . .
```

At the bottom, the 'Compilation results...' panel shows the following details:

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\HD\Desktop\Q_2.exe
- Output Size: 1.83260917663574 MiB
- Compilation Time: 1.94s

The status bar at the bottom indicates the cursor is at Line 1, Column 19, and the file length is 389 bytes. The system clock shows 4:25 PM on 12/28/2020.

QUESTION NO # 03



The screenshot displays the Dev-C++ IDE interface. The main window shows the source code for a C++ program named Q3.cpp. The code defines an array of 5 integers and a pointer that points to the first element of the array. It then iterates through the array, printing the address of each element. The output window shows the following addresses:

```
Adress of array elements 1 : 0x23fe24
Adress of array elements 2 : 0x23fe28
Adress of array elements 3 : 0x23fe2c
Adress of array elements 4 : 0x23fe30
Adress of array elements 5 : 0x23fe34
```

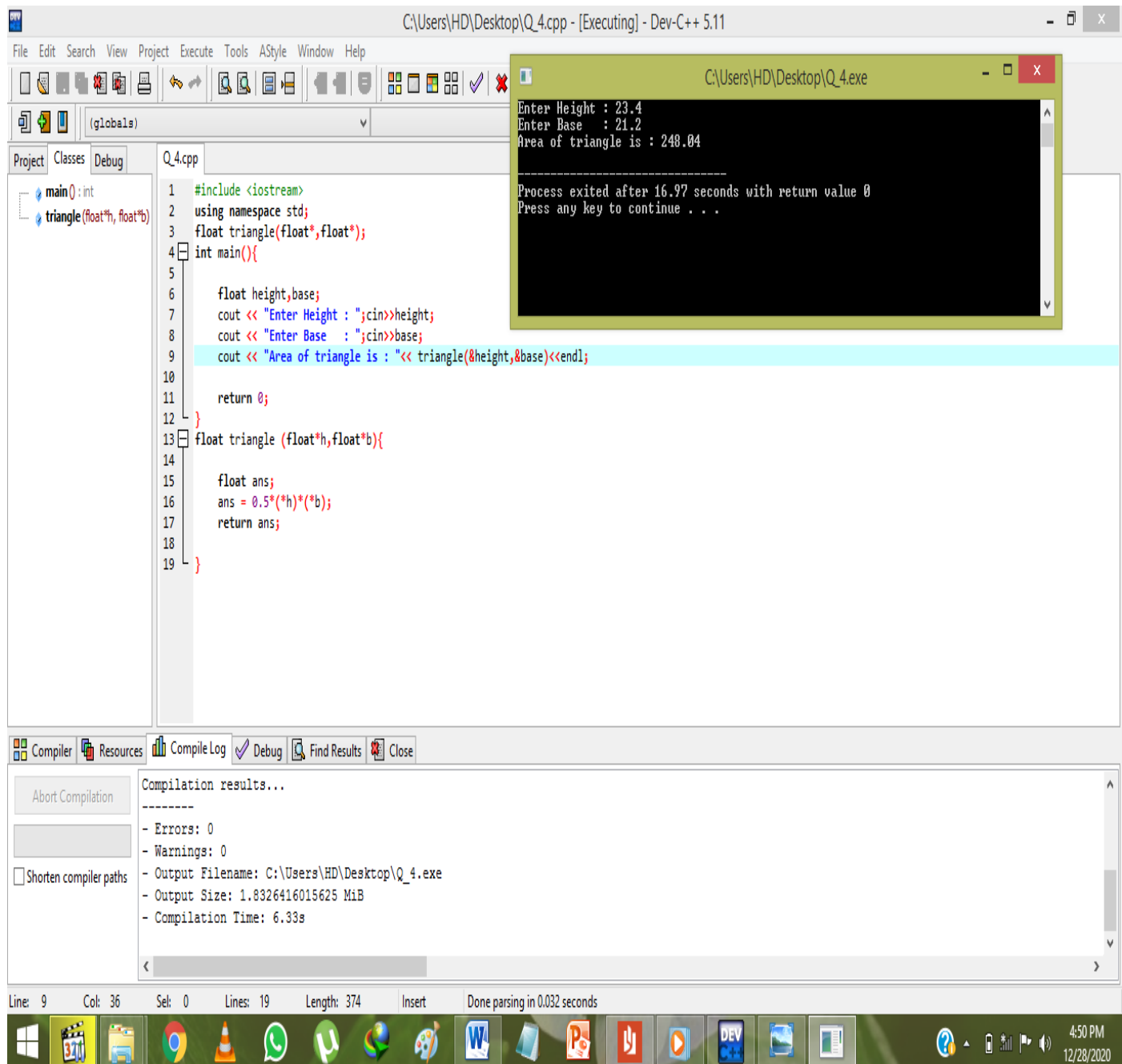
The process exited after 0.1692 seconds with return value 0. The compilation results window shows that the program compiled successfully with 0 errors and 0 warnings. The output filename is C:\Users\HD\Desktop\Q_3.exe, the output size is 1.83260917663574 MiB, and the compilation time is 3.34s.

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     const int m=5;
6     int array[m];
7     int *pointer ;
8     pointer = &array[m];
9     for (int i=0;i<m;i++){
10         cout << "Adress of array elements "<<i<< " : "<< pointer+i<<endl;
11     }
12     return 0;
13 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\HD\Desktop\Q_3.exe
- Output Size: 1.83260917663574 MiB
- Compilation Time: 3.34s

QUESTION NO # 04



```
#include <iostream>
using namespace std;
float triangle(float*,float*);
int main(){
    float height,base;
    cout << "Enter Height : ";cin>>height;
    cout << "Enter Base : ";cin>>base;
    cout << "Area of triangle is : "<< triangle(&height,&base)<<endl;
    return 0;
}
float triangle (float*h,float*b){
    float ans;
    ans = 0.5*(h)*(b);
    return ans;
}
```

Enter Height : 23.4
Enter Base : 21.2
Area of triangle is : 248.04

Process exited after 16.97 seconds with return value 0
Press any key to continue . . .

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\HD\Desktop\Q_4.exe
- Output Size: 1.8326416015625 MiB
- Compilation Time: 6.33s

Line: 9 Col: 36 Sel: 0 Lines: 19 Length: 374 Insert Done parsing in 0.032 seconds

QUESTION NO # 05

The screenshot shows the Dev-C++ IDE with a C++ program for calculating the area of a triangle and a circle. The code is as follows:

```
1 #include <iostream>
2 using namespace std;
3 float area(float*,float*);
4 float area(float*,const float*);
5 int main ()
6 {
7     float a,b,c;
8     const float pi =3.1416;
9     cout << "Enter Height : ";cin>>a;
10    cout << "Enter Base : ";cin>>b;
11    cout << "Enter Radius : ";cin>>c;
12    cout << "Area of Triangle : "<<area(&a,&b)<<endl;
13    cout << "Area of Circle : "<<area(&c,&pi)<<endl;
14    return 0;
15 }
16 float area (float*h,float*b){
17
18     float ans= 0.5*(h)*(b);
19     return ans;
20 }
21
22 float area (float*r,const float*p){
23
24     float ans= (*p)*(r)*(r);
25     return ans;
26 }
27 }
```

The execution output window shows the following text:

```
Enter Height : 2
Enter Base : 3
Enter Radius : 3
Area of Triangle : 3
Area of Circle : 28.2744

-----
Process exited after 6.873 seconds with return value 0
Press any key to continue . . .
```

The status bar at the bottom indicates: Line: 24 Col: 28 Sel: 0 Lines: 27 Length: 567 Insert Done parsing in 0.031 seconds.

QUESTION NO # 06

The screenshot displays the Dev-C++ IDE interface. The main window shows a C++ program file named Q_6.cpp. The code includes headers for `<iostream>` and `<math.h>`, uses the `std` namespace, and defines a `main` function. The program calculates various mathematical values using `cout` statements and `endl` for line breaks. The output window on the right shows the results of these calculations.

```

1  #include <iostream>
2  #include <math.h>
3  using namespace std;
4  int main()
5  {
6      double x = 45;
7      cout << "Sine of 45 : " << sin(x) << endl<<endl;
8      cout << "Cosine of 45 : " << cos(x) << endl<<endl;
9      cout << "Tangent of 45 : " << tan(x) << endl<<endl;
10     double y = 14;
11     cout << "Square root of 14 : " << sqrt(y) << endl<<endl;
12     int z = -25;
13     cout << "Absolute value of -25 : " << abs(z) << endl<<endl;
14     cout << "Power value of 45^14 : " << pow(x, y) << endl<<endl;
15     x = 4;
16     y = 20;
17     cout << "Hypotenuse as x=4,y=20" << hypot(x, y) << endl<<endl;
18     x = 19.234;
19     cout << "Floor value of 19.234 : " << floor(x) << endl<<endl;
20     x = 1.0;
21     cout << "Arc Cosine value of x=1.0 : " << acos(x) << endl<<endl;
22     cout << "Arc Sine value of x=1.0 : " << asin(x) << endl<<endl;
23     cout << "Arc Tangent value of x=1.0 : " << atan(x) << endl<<endl;
24     y = 12.3;
25     cout << "Ceiling value of 12.3 : " << ceil(y) << endl<<endl;
26     x = 57.3;
27     cout << "Hyperbolic Cosine of 57.3 : " << cosh(x) << endl<<endl;
28     cout << "Hyperbolic tangent of 57.3 : " << tanh(x) << endl<<endl;
29     y = 90;
30     cout << "Log value of 90 : " << log(y) << endl<<endl;
31     return 0;
32 }

```

The output window shows the following results:

```

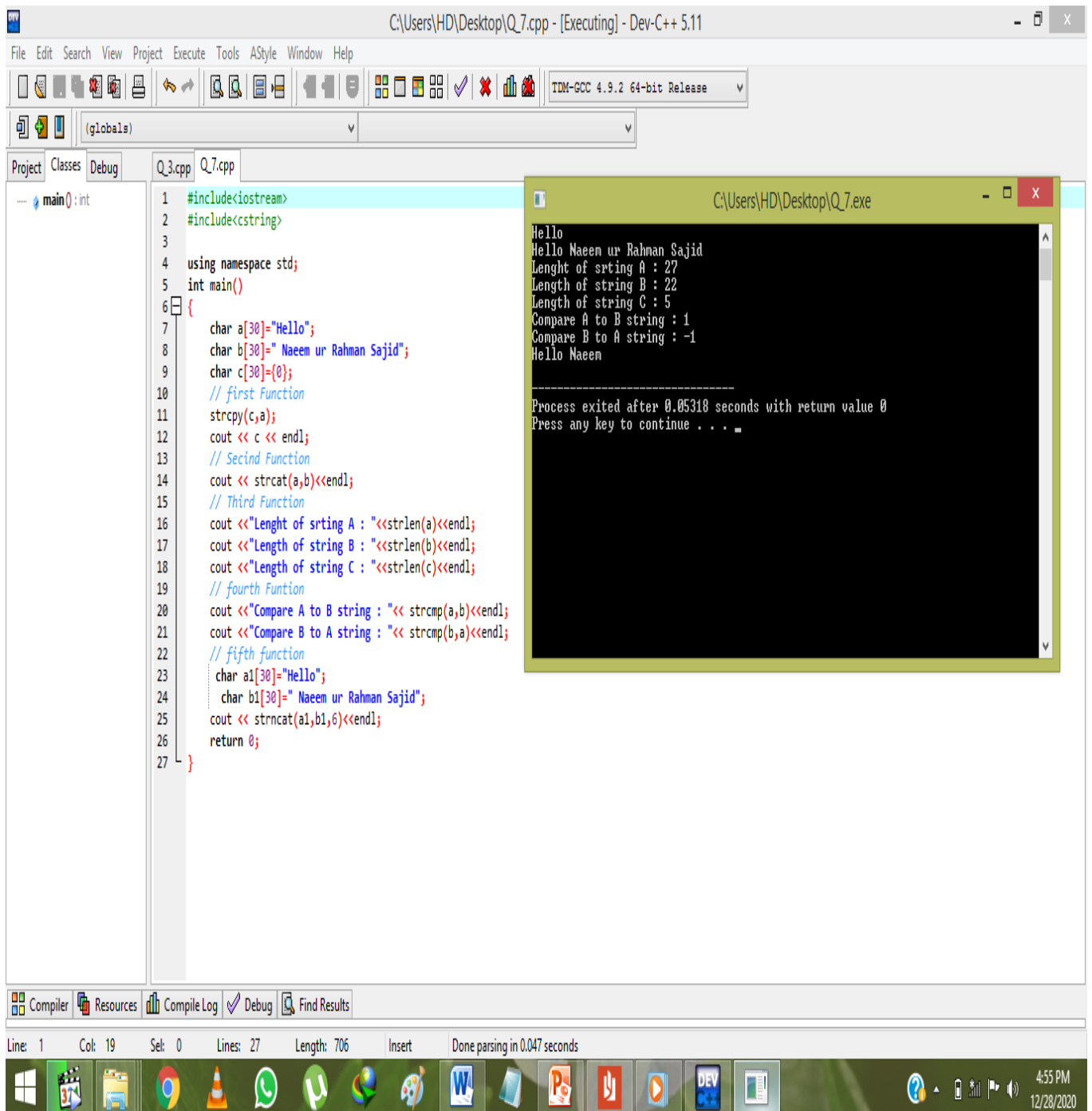
Sine of 45 : 0.850904
Cosine of 45 : 0.525322
Tangent of 45 : 1.61978
Square root of 14 : 3.74166
Absolute value of -25 : 25
Power value of 45^14 : 1.39629e+023
Hypotenuse as x=4,y=20: 20.3961
Floor value of 19.234 : 19
Arc Cosine value of x=1.0 : 0
Arc Sine value of x=1.0 : 1.5708
Arc Tangent value of x=1.0 : 0.785398
Ceiling value of 12.3 : 13
Hyperbolic Cosine of 57.3 : 3.83746e+024
Hyperbolic tangent of 57.3 : 1
Log value of 90 : 4.49981

-----
Process exited after 0.09713 seconds with return value 0
Press any key to continue . . .

```

The status bar at the bottom indicates the current line is 32, column is 2, and the selection is 0. The total length of the code is 1260 characters. The IDE also shows a taskbar at the bottom with various application icons and the system clock showing 4:58 PM on 12/28/2020.

QUESTION NO # 07



The screenshot displays the Dev-C++ IDE interface. The main window shows the source code for `Q_7.cpp`, which includes `<iostream>` and `<cstring>`, uses the `std` namespace, and defines a `main` function. The code performs several string operations: it declares and initializes character arrays `a` and `b`, prints their lengths using `strlen`, concatenates `a` and `b` using `strcat`, compares them using `strcmp`, and prints a substring of `a` using `strncat`. A separate console window titled `C:\Users\HD\Desktop\Q_7.exe` shows the program's output, which matches the code's logic. The IDE's status bar at the bottom indicates the file is at line 1, column 19, with a total of 27 lines and a length of 706 characters. The system tray shows the time as 4:55 PM on 12/28/2020.

```
1 #include<iostream>
2 #include<cstring>
3
4 using namespace std;
5 int main()
6 {
7     char a[30]="Hello";
8     char b[30]=" Naeem ur Rahman Sajid";
9     char c[30]={0};
10    // first Function
11    strcpy(c,a);
12    cout << c << endl;
13    // Secind Function
14    cout << strcat(a,b)<<endl;
15    // Third Function
16    cout <<"Lenght of srting A : "<<strlen(a)<<endl;
17    cout <<"Length of string B : "<<strlen(b)<<endl;
18    cout <<"Length of string C : "<<strlen(c)<<endl;
19    // fourth Funtion
20    cout <<"Compare A to B string : "<< strcmp(a,b)<<endl;
21    cout <<"Compare B to A string : "<< strcmp(b,a)<<endl;
22    // fifth function
23    char a1[30]="Hello";
24    char b1[30]=" Naeem ur Rahman Sajid";
25    cout << strncat(a1,b1,6)<<endl;
26    return 0;
27 }
```

Output:

```
Hello
Hello Naeem ur Rahman Sajid
Lenght of srting A : 27
Length of string B : 22
Length of string C : 5
Compare A to B string : 1
Compare B to A string : -1
Hello Naeem

Process exited after 0.05318 seconds with return value 0
Press any key to continue . . .
```