



UNIVERSITY OF THE PUNJAB
B.S. 4 Years Program / Second Semester – 2019

Roll No.

Paper: Programming Fundamentals
Course Code: IT-102, IT-12395 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Question # 2 Short Answer Questions.

4 x 5 = 20 marks

- i) What will be the output of the following program? If the program contains some errors (*syntax, run time or logical*) then correct them before writing the output.

```
# include <iostream.h>
int main()
{
    int i;
    int array[3]={10, 15, 20};
    int *ptr1, *ptr2, *ptr3;

    ptr1 = array;
    ptr2 = array+1;
    ptr3 = array+2;
    *ptr2 = 6;
    ptr2 = ptr3;
    *ptr2 = 4;
    ++(*ptr1);

    for (i=0; i<3; i++)
        cout<<array[i]<<" ";

    cout<<endl;

    ++ptr1;
    *ptr1 = 14;

    for (i=0; i<3; i++)
        cout<<array[i]<<" ";

    cout<<endl;
}
```

- ii) What will be the output of the following program? If the program contains some errors (*syntax, run time or logical*) then correct them before writing the output.

```
#include <iostream.h>
void inc_count(int *count_ptr)
{
    (*count_ptr)++;
}
int main()
{
    int count = 0;

    while (count < 10)
        inc_count(&count);

    cout<<count;

    return (0);
}
```

P.T.O

- iii) Write a function name `isPrime`, which takes an integer as an argument and returns `true` if the argument is a Prime number, or `false` otherwise.[only write the definition for this function].

```
bool isPrime ( int num ) ;
```

- iv) Implement the following function *threeToZero* which accepts an integer array and its size, if there is a 2 in the array immediately followed by a 3, set the 3 element to 0.

Note: Indent your code properly. Use meaningful variable names. Write `cin`, `cout`, and all `c++` keywords in lowercase (like `if`, for etc.)

```
void threeToZero(int arr[], int size)
{
    // complete the function definition here
```

Question # 3

2 x 15 = 30 marks

i)

Write down a program that accepts the following command line arguments:

- I. The name of the text file that contains single – digit integer data separated by a white space.
- II. An integer to be searched from the data in the file.

The program displays the total number of occurrences of the integer in the file data.

(ii)

Assume yourself as a part of the control unit of Windows Live hotmail. Your job is to determine the password length of the user entered passwords.

A password

- Is said to be short if it contains less than 6 characters.
- Is perfect if its length is greater than 6. (Max. length is 20 characters.)

You are to design a function that takes a parameter string (By Reference) and determines its length according to the above mentioned criteria.



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – 2019

Paper: Programming Fundamentals

Course Code: IT-102, IT-12395 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct option.

(10x1=10)

1. Placing function prototypes in the definitions of other functions restricts function calls to the function in which the prototypes appear.
[True] [False]
2. Pointers are valid operands in arithmetic expressions, assignment expressions, and comparison expressions. However, not all the operators normally used in these expressions are valid in conjunction with pointer variables.
[True] [False]
3. A pointer to void can be dereferenced just like any other pointer, by using the indirection operator (*).
[True] [False]
4. If b is the name of an array of at least 4 elements, then the following statements both refer to its 4th element.
 &b[3] bPtr + 3
[True] [False]
5. The following statement defines an array of pointers to strings.
 const char *suit[3] = { "Hearts", "Diamonds", "Clubs" };
[True] [False]
6. The following function receives a const double-scripted array of integers and two const string arrays.
 void deal(const int wDeck[][13], const char *wFace[], const char *wSuit[])
[True] [False]
7. A function name is really the starting address in memory of the code that performs the function's task. Pointers to functions can be passed to functions, returned from functions, stored in arrays, and assigned to other function pointers.
[True] [False]
8. The following statement defines a pointer to a function that receives two integer parameters and returns an integer result.
 int *compare(int, int);
[True] [False]
9. In C, all arrays passed to functions are passed by reference.
[True] [False]
10. The string "life ", may be stored in an array of 4 characters.
[True] [False]