



Date: 25<sup>th</sup> March 2013

Time: 4.00 pm – 5.30 pm

Answer ALL questions.

Q1.

- a) What are the advantages of using sub programs?
- b) What are the differences between procedures and functions in the Pascal programming language?
- c) What are the rules we have to consider when naming Pascal programs?
- d) Convert the following **Pascal** program into a **C** program.

```
PROGRAM Scores1 (INPUT, OUTPUT);
CONST
    NumberOfStudents = 5;
VAR
    Score: Array [1 .. NumberOfStudents] OF REAL;
    Index: INTEGER;
BEGIN
    (*Read the Scores array*)
    FOR Index: = 1 TO NumberOfStudents DO
        BEGIN
            WRITE ('Enter Score For Student #', Index, ': ');
            READLN (Score [Index])
        END;
    (*Display Results*)
    WRITELN;
    WRITELN (' Student ##### Score ');
    FOR Index: = 1 TO NumberOfStudents DO
        BEGIN
            WRITE (Index: 7);
            WRITELN (Score [Index]:7:2);
        END;
    END.
```

Q2.

- a) Write a C or Pascal program to print the following output by using the **FOR Loop**.

```
1
22
333
4444
55555
```

- b) How does an array differ from ordinary variables?
- c) Declare arrays given below by using the C programming language. (Do not need to write a complete program).
- (i) An array to store string "welcome".
  - (ii) An array to store marks (with two decimal points) of 20 students.
  - (iii) An array to store the following table in memory.

|   |   |   |
|---|---|---|
| 2 | 4 | 3 |
| 1 | 5 | 2 |

- d) Write a C program to print the following output by using a 2D array.

```
123
456
```

### Q3.

- a) What are the differences between **Arrays** and **Pointers**?
- b) What is the output of the following program?

```
#include <stdio.h>
int main( )
{
    int a1, a2;
    int b=3;
    int *c;
    a1 = 2 * (b+5);
    c = &b;
    a2 = 2* (*c + 5);
    printf ("\\n a1 = %d , a2 = %d\\n", a1, a2);
    getch();
}
```

- c) Write a complete C program to compare the lengths of two strings S1 and S2.

If **S1>S2** print "S1 is greater than S2".  
 If **S2>S1** print "S2 is greater than S1".  
 If **S1 and S2 are same** print "S1 and S2 are same".

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