11/12/18
9.30 -12.30

Paper Code: TCS101

B. Tech End Semester Examination 2018

First Semester

FUNDAMENTAL OF COMPUTERS AND INTRODUCTION TO PROGRAMMING

Time: Three Hours

MM: 100

Note:
(i) This question paper contains five questions.
(ii) All questions are compulsory.
(iii) Instructions on how to attempt a question are mentioned against it.
(iv) Total marks assigned to each question are **twenty**.

Q1. (Attempt any two questions of choice from a, b and c)   (2X10=20 Marks)
1a.(I). Print following pattern without using nested loop   (5 Marks)

```
    1
   11
  121
 1331
14641
```

(II). Life of a C program using a neat diagram only which consist all compilations steps and extension of files generated during these steps.   (5 Marks)

1b. (I)Explain different methods of initialization of 1-D and 2-D array.   (5 Marks)

(II)Explain role of array with its advantages and disadvantages. Also explain Array bound check and segmentation fault problem in C.   (5 Marks)

1c. Predict the output of following code: (assume 16 bits compiler)

1c(i)   3 Marks

```c
int main()
{
int x=5,y=6,z;
z=x++;
printf("\n%d - %d", x , z);
z=++x;
printf("\n%d - %d", x , z);
z=y--;
printf("\n%d - %d", y , z);
z=--y;
printf("\n%d - %d", y , z);
z=(x++) + (y++);
printf("\n%d - %d - %d" , x , y , z);
return 0;
}
```

1c(ii)   3 Marks

```c
int main()
{
  int n;
  for(n = 7; n!=0; n--)
  {
        printf("n = %d", n--);
  }
  return 0;
}
```

```c
# include <stdio.h>
int main()
{
    int i=0;
    for(i=0; i<20; i++)
    {
        switch(i)
        {
            case 0:
                i+=5;
            case 1:
                i+=2;
            case 5:
                i+=5;
            default:
                i+=4;
                break;
        }
        printf("%d ", i);
    }
    return 0;
}
```

Q2. (Attempt any two questions of choice from a, b and c)   (2X10=20 Marks)

2a. Write notes on following with examples:
   (I). Jump statements in C
   (II). Entry Control Loop vs Exit Control loop   (5 Marks)
                                                                      (5 Marks)

2b. Write a C program to find the sum of the following series:
        1!-2!+3!-4!+............ upto n terms

2c. Predict the output of following code: (assume 16 bits compiler)

   2c(i)
                                                                      3 Marks
```c
#include <stdio.h>
void main()
{
    int i = 0, j = 0;
    for (i = 0;i < 2; i++)
    {
        for (j = 0;j < 2; j++)
        {
            if (i > 1)
                break;

            printf("Hello \n");
        }
        printf("Hi \n");
    }
}
```

   2c(ii)   3 Marks
```c
#include <stdio.h>
int main()
{int x=1;
if(5 || ++x) {
    printf("%d\n",x);
}
    return 0;
}
```

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