

Roll Number:

*Thapar University Patiala*  
Department of Computer Science and Engineering

BE F' Year, MST

18 September 2017

Time: 02 Hours; MM: 50

UTA007: Computer Programming-I

Course Instructors:

Dr. Maninder Singh, Dr. Maninder Kaur, Dr. Jhilik Bhattacharya, Dr. Vijay Kumar, Dr. HS Pannu, Dr. Mohd. Naseem, Dr. Nidhi, Dr. Seemu Sharma, Mr. Gurpal Singh, Mr. Ashish Girdhar, Mr. Hemant Gainey, Ms. Divya Sehgal

*Note: Use of Calculator is not allowed.*

*It is mandatory to mention your Group and Instructor name.*

**Q1.** You have been assigned task to enact as syntax & semantic corrector, suggest your observations for the following code snippets: you are expected to give answer as (Q1-(i): Syntax error: ----- Semantic(Logical) correction ----- ) (if any).

```
i) #include<stdio.h>
    int Main(){
        int i;
        printf("%d",i);
        return 0;
    }
```

```
ii) #include<stdio.h>
    int main()
    {
    int i = 0;
    for(i = 0; i < 3; i++); {
    printf("loop ");
    printf("\n");
    }
    return 'a';
    }
```

```
iii) #include <stdio.h>
int main()
{
    int a, b, c;
    a + b = c;
    printf("%i",c);
    return 0;
}
```

```
iv) #include<stdio.h>
    int main(){
        char a=128;
        unsigned char b=256;
        printf("%d %d",a,b);
        return a;
    }
```

```
v) #include<stdio.h>
    int main(){
        printf("Enter two numbers:\n");
        scanf("%d %d",a,b);
        printf("Sum of these numbers is %d",a+b);
        return 0;
    }
```

```
vi) #include<stdio.h>
    int main() {
    printf("\nabc\talt\bluring\rCis\n\n100%%true\n");
    return 0;
    }
```

```
vii) #include<stdio.h>
int main(){
printf(“%d %d”,sizeof(char),sizeof(‘\n’);
return 0;
}
```

(7x2=14)

**Q2.**

i) Find the value of 32-bit floating-point number represented in IEEE-754: 0 10000000 110 0000 0000 0000 0000.

ii) Explain the following operators with examples: (a) arithmetic (b) logical (c) bitwise (d) unary (e) binary (f) ternary.

iii) Do the following conversions: (do not merely give value, explain the procedure adopted to do the conversions)

a)  $(10001011)_2 = (?)_{10}$

b)  $(A91)_{16} = (?)_2$

(4, 6, 4)

**Q3. For the following: write algorithm, draw flowchart followed by C program.**

Q5. For the following, write algorithm, draw flowchart followed by C program.  
Number of Cats got together and decided to kill between them 999919 mice. Every cat killed equal number of mice. Each cat killed more rats than there were cats. Write a program to find number of cats.

(4, 4, 4)

**Q4.**

i) Showcase life journey of C program from .c to executable, highlight role of header file(s), library file(s) and object file(s) in this context.

ii) Draw memory hierarchy: showcasing size, speed and cost.

(6, 4)

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(6, 4)