Roll No. | | | | | | | |

Paper Code -TCS-101

B.Tech Mid Semester Examination 2018

1st Semester (All Branch)

Fundamentals of Computer and Introduction to Programming

MM: 50

Time: 1:30 Hours

Note:

(i) This question paper contains two sections.

(ii) Both sections are compulsory.

(iii) Assume that the each programming code is compiled on 16 bit Machine.

Section-A

Q1. Attempt all **(1 x 5 = 5 Marks)**

a) C program execution begins from_____

b) main is keyword or not?.(True/False)

c) 1 Petabyte =_____Terabytes=_____Gigabytes

d) A _____is a special program that processes statements written in a particular programming language and turns them into machine language or "code" that a computer's processor uses.

e) Calculate the range of signed int variable in 32 bit machine.

Q2. Attempt any five **(3 x 5 = 15 Marks)**

a) What are the rules for a valid identifier in C language?

b) Explain type conversion/ type casting in C.

c) Write a C program to input three numbers and find the largest number using ternary operator.

d) What is difference between unary, binary and ternary operator? Give one suitable example for each category.

e) Find the output of following code in 16 bit Machine-

i) (1.5)

```
int main()
{
int x, y = 5, z = 5;
x = y==z;
printf("%d", x);
return 0;
}
```

ii) (1.5)

```
void main()
{
printf(" \"HI %% BYE %% HI\"");
}
```

f) Draw a flowchart to input two numbers x,y divide x by y.

Sample Input : 2 0

Sample Output : Divide By Zero Error

Sample Input : 3 2

Sample Output : 1.500000

Section-B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question.

Q3. **(5 x 2 = 10 Marks)**

a) Write short notes on the following-

1) Translator (1.5)

2) Type Modifiers (2)

3) Third Generation of Computer (1.5)

b) Draw a flowchart to input two different times in given format (hour.minute.second) and add them. Display the output in the following format.

Sample Input: 11 59 59
3 1 1(where first second and third values are hour minute second respectively)

Sample Output: 15:1:0(where first second and third values are hour minute second respectively)

c) Write a C program to calculate the earnings by workers who are paid an hourly wage, with weekly hours greater than 40 being paid "1.5 times" the regular hourly wage. Weekly hours and hourly wage are inputted by the user.

(5 x 2 = 10 Marks)

Q4.

a) What is Flow-Chart? What are the advantages of using flow-charts? Explain various symbol of flow-chart with an example.

b) Three numbers **A, B** and **C** are the inputs. Write a C program to find second largest among three numbers.

Sample Input : 120 11 400
Sample Output: 120

c) Explain computer system memory hierarchy with a block diagram. Your answer should include factors like cost, access time, storage capacity etc.

(5 x 2 = 10 Marks)

Q5.

a) What is operating system? Explain its function in detail.

b) Write a program to take a character (C) as input and check whether the given character is small case alphabet or capital case alphabet or a digit or a special symbol.

Sample Input : 7 Sample Input : a
Sample Output: digit *Sample Output: small case*

c) Find the output of following code in 16 bit Machine- **(1.5 each)**

i)
```
int main()
{
int a=0,b=0,c=0;
        if( (a=5) || (b=10))
        {
     printf("%d %d",++a,b++);
        }
        return 0;
        }
```

ii)
```
int main()
{
char a = 40;
char b = 40;
char c = 10;
char d = (a * b) / c;
printf ("%d ", d);
return 0;
}
```

iii)
```
int main()
{
float  a=23.3:
 if(a==23.3)
 {
  printf("EQ");
 }
else
 {
 printf("NQ");
 }
return 0;
}
```

iv)
```
int main()
{
int a;
char c='9';
a=c-9;
printf ("%d\t%c", a,a);
return 0;
}
```