Roll No.

Paper Code: TCS101

Mid Semester Examination, September, 2019

B.Tech.

1st Semester

Paper Name: FUNDAMENTALS OF COMPUTERS AND INTRODUCTION TO PROGRAMMING

Time: 1:30 Hours

MM: 50

Note:

(i) Question paper contains two sections.

(ii) Both sections are compulsory.

Section A

Q1. Fill in the blanks/True-False (1 x 5 = 5 M)

a) A Computer uses _____ number system to store information.

b) 1 Petabyte = _____ Terabytes= _____ Gigabytes.

c) ULSI technology is used in _____ generation of computers.

d) 'C' program execution begins from _____.

e) Keywords in C can be used as variable names. T/F

Q2. Attempt any five questions. (3 x 5 = 15 M)

a) List important characteristics of an Algorithm. Write an algorithm to convert & display the temperature in degrees Centigrade by accepting the temperature in degrees Farenheit from the keyboard.

b) Assume a videographer is recording a video show for 20 hours. About how much data will be recorded in GB and TB? (Assume HD (1080p) video will use as much as 12MB per minute)

c) Draw a flowchart to find factorial of a number accepted from the user. Check for valid number before computing the factorial.

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

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

```
#include<stdio.h>
void main()
{
  int x,y = 5, z = 5;
  printf("%d", x=y);
  printf("%d", y==z);
}
```

```
#include<stdio.h>
void main()
{
  int x = 11, y=2;
  float z = x/y;
  float f = (float) x/y;
  printf("z = %f", z);
  printf("f = %f", f);
}
```

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

Section-B

Question Nos. 3, 4 and 5 each contains three sub-questions a, b & c. Attempt any two sub-questions from each of the questions.

Q3.

(5 x 2 = 10 M)

a) Explain block diagram of a Computer System with a neat sketch.

b) Explain computer system memory hierarchy with neat diagram by considering the factors like cost, storage capacity, access time & performance.

c) Explain various symbols used in a flowchart. Draw a flowchart to find whether the number accepted from the keyboard is positive, negative or zero. Display appropriate message.

Q 4.

(5 x 2 = 10 M)

a) Explain fourth and fifth generation computers with examples.

b) Write an algorithm or flowchart to interchange the contents of the variables P and Q without using a third variable. Accept the two numbers through the keyboard. Also, write its corresponding C program.

c) Write a C program to accept the marks of a student in three subjects (Maximum Marks 100). If student scores more than 40% then display "**Pass**" else display "**Fails**".

Q 5.

(5 x 2 = 10 M)

a) Write a C program to compute the gross salary of an employee. (GS=BP +HRA+TA+DA)
Where GS: Gross Salary (to be computed by the user), BP (Basic Pay is entered by the user)
HRA=10% of BP
TA= 5% of BP
DA = 50% of BP

b) What would be the output of the following programs: **(1+1+2+1= 5M)**

(i)	(ii)	(iii)	(iv)

void main()
{
float a=15,b=8;
int c;
c=a%b;
printf("%d", c);
}
	int main()
	{
	float x=9.8356;
	printf("%.2f \n", x);
	return 0;
	}
		int main()
		{
		int p=10,q,s;
		q=p++;
		s=p+q;
		printf("\n%d%d",q,s);
		return 0;
		}
			void main()
			{
			int x =-5, y=-8, z;
			
			z= !(x>y) && (y< -10 || x!=5)
			printf("%d",z)
			}

c) Write short notes on **any two** of the following:

i. Functions of Operating System
ii. Types of Networks
iii. Type Conversion in C
iv. Life Cycle of a C program

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