

Thapar Institute of Engineering and Technology
Computer Science and Engineering Department

B.E 1st Year

Auxillary Examination

Course Code: **UTA007**

Course Name: Computer Programming I

Faculty: Dr. Seemu Sharma

Note: All the questions are compulsory.

Roll No.....{21.702065}

Date: **24-02-2018, 17:30 hrs**

Time Allowed: 3 Hrs

Max. Marks: 100

1 a)	Give output of the following codes:	1.5 *4
	<div> i) <pre>#include<stdio.h> int main() {signed char i=0; for(;i>=0;i++); printf("%d\n",i); return 0; }</pre> </div> <div> ii) <pre>#include<stdio.h> int main() { char *ptr = "ComputerProgramming"; printf("%s\n", *&ptr); return 0; }</pre> </div>	
	<div> iii) <pre>#include <stdio.h> int main() { char a = 10; char b = 5; char c = 2; char d = (a * b) / c; printf("%d ", d); return 0; }</pre> </div> <div> iv) <pre>#include <stdio.h> int main() { int count; for (count = 0; count < 10; ++count) { printf("#"); if (count > 6) continue; printf("%d", count); } return 0;}</pre> </div>	
b)	Convert the following numbers i) $(101010011)_2 = (?)_{10}$ ii) $(7773)_8 = (?)_{16}$ iii) $(F98)_{16} = (?)_2$ iv) $(55)_{10} = (?)_2$	1.5 *4
c)	Add - 43 and -56 using two's complement method.	3
2 a)	Write a menu driven program in C having following options, by taking an integer input from the user a) To calculate factorial of a number b) Whether the number is prime or not c) Whether the number is odd or even	7
b)	Write a program in C to interchange the largest and smallest number in the array.	5
c)	Describe block scope, function scope and program scope of variables in C with example.	3
3 a)	Differentiate between following (Give example where needed): i) Cache Memory and RAM ii) System Software and Application Software iii) Formatted and Unformatted Functions iv) Recursion and Iteration v) Relational and Conditional Operator (with example)	10

3 b)	How is call by value method different from call by reference in C? Explain in detail by taking example of a program.	5
4 a)	Write a program to print Fibonacci series by making recursive calls to a function.	6
b)	Write a C code to do swapping of two numbers using Bitwise XOR operator.	4
c)	Write a program to print following pattern: 54321 4321 321 21 1	5
5 a)	Write a program to count vowels and consonants in a string using pointer.	8
b)	Write a program to find maximum number in an array using pointers.	7
6 a)	What are array of structures? How do we initialise an array of structures in C?	4
b)	Write a program to add two complex numbers by passing structure to a function.	6
c)	Explain dynamic memory allocation process in C with the help of a program.	5
7 a)	How are linked lists different from arrays?	3
b)	Write the C code to create and print the linked list.	7