

Course Code- FCCS002

Time- 1 Hr 30 Mins

Course Title - Computer Programming

Max. Marks- 15

Note: Attempt All Questions. Missing data/Information if any may be suitably assumed

Q. No.	Question	Marks	CO
1a	What are different types of operators in C. Explain	2	CO1
1b	What are symbolic constants? <i>Explain with Example</i>	1	
2a	Explain in detail scanf function used in C. How it is different from getchar() and gets() function.	1.5	CO1
2b	<p>(i) What is the output of following code</p> <pre> int a = 4, b = 0, c; while(a >= 0) { a--; b++; if(a == b) continue; else printf("\n %d %d", a, b); } </pre> <p><i>Handwritten notes: 4, a=4, b=0, a=3, b=1, 4, 0, 3, 1, 2, 2, 0, 4, 0, 3</i></p> <p>(ii) Represent the following code using ?: operator</p> <pre> if(x == 0) a = 10 else if(x > 0) a = 100 else a = 200 </pre> <p>(iii) Write a switch statement that will examine the value of integer variable flag and print one of the following message depending upon the value assigned to flag</p> <p>(a) HOT, if flag has value of 0 (b) COLD, if flag has value of 1 (c) LUKE WARM, if flag has value of 2 (d) OUT OF RANGE, if flag has any other value</p>	0.5x3	
3a	Explain (i) Continue statement (ii) String Constants (iii) Array	0.5x 3	CO1
3b	write a program to read two pairs of integers. each pair represents a fraction. For example, the pair 3 5 represents the fraction 3/5. Your program should print the sum of the given fractions. For example, give the pairs 3 5 and 2 3, your program should print 19/15, since 3/5 + 2/3 = 19/15.	1.5	CO2
4a	Explain different types of loops in C language as discussed in the class using suitable example. Under what conditions one type of loop will be preferred over other	1.5	CO1 CO2
4b	Write a Program to input a string and a character to be searched within string. Print the frequency of the character within the string.	1.5	
5a	Write a program to enter maximum 100 integer numbers from user. (till User enters -1) Store the numbers in an integer array. The program should count the number of odd integers and even integers entered by the user and their sum respectively.	2	CO2
5b	What is a pointer? How a variable can be accessed through its pointer. Illustrate with the help of an example.	1	

Note: Attempt all Questions. Each Question has three parts out of which any two is to be attempted. Missing data if any may be suitably assumed

S.NO	QUESTIONS	MARKS	
Q1	Attempt any two parts out of three		
a	<p>1. What is the purpose of break statement in C? Within which control statements can the break be included? Illustrate using suitable example.</p> <p>2. What is conditional operator in C Language. Explain with suitable example</p> <p>3. What is the output of following C program:</p> <pre>for(m = 0; m < 3 ; ++m) Printf("%d\n", (m%2) ? m : m+2);</pre> <p>4. Explain bitwise operators.</p>	1+1+1+1	CO1 CO2 CO3
b	<p>1. What is enumeration data type in C Language? How it is defined. Illustrate by taking a Example. How values are assigned to enumeration constants?</p> <p>2. Given a list of marks ranging 0 to 100, write a program in C to compute and print the Number of students"</p> <p>(a) Those who have got more than 80 marks</p> <p>(b) Those who have got more than 60 marks</p> <p>(c) Those who have got more than 40 marks</p> <p>(d) Those who have got 40 or less marks</p> <p>(e) In the range 81 to 100</p> <p>(f) In the range 61 to 80</p> <p>(g) In the range 41 to 60</p> <p>The program should use minimum number of if statements</p>	2+2	
c	<p>1. What is the output of following C program code:</p> <pre>Ch = 'A'; while(Ch <= 'F'){ switch(Ch) { case 'A' : case 'B' : case 'C' : case 'D' : Ch++; continue; case 'E': case 'F' : Ch++; } putchar(Ch); }</pre> <p>2. Given a set of 20 two digit integers containing both negative and positive values, write a program in C using for loop to compute sum of all positive values and print the sum and the number of values added. The program should use scanf to read values and terminate when the sum exceeds 999. Do not use goto statement</p>	1+3	
Q2	Attempt any two parts out of three		
a	<p>1. Explain and differentiate between structure and union? Illustrate using suitable Example.</p> <p>2. Write a C program that reads several names and addresses into the computer using array of structure and displays the address corresponding to the name entered by the user.</p>	2+2	CO4

b	1. What is the meaning of each of the following declaration: Int (*p)[20] int *p(char *a[1]) Int p(char (*a)[]) int *p[10] 2. What is bit field? Explain by taking suitable example. 3. Write a C program that reads as input a line and prints number of digits, vowels and Consonants using pointer	1+1+2	
c	Write a program in C that inputs two 3X3 matrix A and B and prints them. It also Prints (a) Sum of matrix A and B (b) transpose of Matrix (c) all 2X2 matrix in Matrix A	4	
Q3	Attempt any two parts out of three		
a	1. Define a function . What are the advantages of using functions. 2. What is recursion ?What are its advantages and disadvantages? Write a C program to convert a decimal number into binary Number using recursion.	1+3	CO4 CO5
b	1. What are the different storage classes supported by C? Explain in detail 2. what is the difference between call by value and call by reference while calling a function. Explain by taking suitable example	2+2	
c	Write a C program using files to maintain student records consisting of Student_ID, name, Mobile number and marks in Physics, Maths and Chemistry using files. The program must do following: i. Add new record ii. Display all the records iii. Update the student record using Student_ID	4	
Q4	Attempt any two parts out of three		
a	Explain in detail sets, lists, tuples and dictionary by taking suitable examples. Explain the operations that can be performed on these.	4	CO1 CO2
b	1. What are lambda and Generator functions in Python? Explain by taking suitable example. 2. Write a program using functions in Python which takes three lists from the user And returns true if there are at least one common element between the three lists Or Write a program in Python to print fibonacci series of n terms(value of n entered by User) using recursion	2 + 2	CO4
c	Explain in detail the different ways in which arguments can be passed to a Function in Python. Illustrate with examples	4	
Q5	Attempt any two parts out of three		
a	1. What is the difference between text and binary files ? Explain different operations That can be performed on a text file in Python	4	CO4 CO5
b	Write a program in Python that takes several lines of input from the user until user Enters -1 and writes these lines to a file called temp.txt. Then the program prompts the User to enter a word . Program searches the word in the file and replaces the word with the string "NSUT" in the file temp.txt. Program also prints the number of occurrence of the Word entered by the user in the file.	4	
c	1. What is a string in Python? In how many ways strings can be created in python? Explain indexing and slicing operation on strings in Python by taking suitable example 2. Write a program in Python that accepts a main string and a sub string and (a) displays all positions of a sub string in a given main String (b)replaces all Occourences of sub string by the string "HELLO" in the main string	2+2	