Shiv Nadar University Chennai

End Semester Examinations, 2023-2024 Odd

Question Paper

Common to B.Tech. AI & DS., B.Tech. CSE (IoT) and B.Tech. CSE (CS)	Semester: I
Course Code & Name: CS1001 PROGRAMMING IN C	
Regulation 2021	
Time: 3 Hours	Maximum: 100 Marks

Q.No		Questions	Marks	CO#	KL#
1	a	Find the value of i, assuming i as an integer variable. $i = 2 * 3 / 4 + 4 / 4 + 8 - 2 + 5 / 8$	2	CO1	KL2
2	a	If d is a float variable, the operation d = 2 / 7.0 would store -------- in d.	2	CO1	KL2

3	a	What would be the output of the following program?
		# include<stdio.h>
		#include<conio.h>
		void fun (int *, int *);
		int main()
		{
		int i=5, j=2;
		fun(&i, &j);
		printf("%d%d\n",i, j);
		return 0;
		}
		void fun (int *i, int *j)
		{
		*i = *i * *i;
		*j = *j * *j;
		}
			2	CO3	KL3

4	a	A function is called _____ if a statement within the body of a function calls the same function.	2	CO3	KL1
5	a	To pass an array to a function, we must always pass _____ and _____.	2	CO2	KL1

6	a	What would be the output of the following code?
		union u{
		int n1, n2;
		}u1;
		void main(){
		u1.n1 = 10;
		u1.n2 = 2;
		printf("%d", u1.n1);
		}
			2	CO4	KL2

7	a	What would be the output of the following code?
		struct mystruct{
		int a, b;
		};
		int main(){
			2	CO4	KL3

		struct mystruct s, *p;
		p = &s;
		(*p).a = 10;
		p->b = 3;
		s.a = 5;
		printf("%d, %d", p->a, s.b);
		}			

8	a	What is the purpose of malloc (), realloc ( ) and free () functions? Explain with the help of suitable examples.	6	CO5	KL2
9	a	Write a menu driven program which has the following options: 1. Factorial 2. Odd or Even 3. Exit Once a menu item is selected, the appropriate action should be taken and once this action is finished, the menu should reappear. Unless the user selects 'Exit' option the program should continue to work.	5	CO1	KL3
10	a	If the lengths of the three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is valid or not. The triangle is valid if the sum of two sides is greater than the largest of the three sides.	5	CO1	KL2
11	a	With an example C program, explain enumerated datatypes in C.	5	CO5	KL2
12	a	Write a recursive function to obtain the sum of first 25 natural numbers.	5	CO2	KL3
13	a	Write a function that receives an integer array as input and outputs the number of prime numbers in the array. [Use functions, array and pointers].	10	CO3	KL4
14	a	Write a program to calculate the percentage marks scored by N school students. The subjects taken up by all the students are English, Maths, Science, and Social Studies. Additionally, the students are required to study either Hindi or Tamil or French. Use structures to store the marks of each student. Calculate the average percentage of marks obtained by the Hindi, Tamil, and French students.	10	CO4	KL3
15	a	Write a C program to generate the following zig-zag pattern of numbers. 00 02 03 09 10 20 01 04 08 11 19 05 07 12 18 06 13 17 14 16 15	10	CO2	KL4
16	a	Write a C program using functions to read a file and count the number of characters, spaces, tabs and newlines present in the file.	10	CO5	KL3
17	a	Give the syntax and description for the following: 1. fopen 2. fputc 3. fclose 4. fprintf 5. fscanf	10	CO5	KL1
18	a	With suitable examples, explain the storage classes in C.	10	CO4	KL1

KL – Bloom's Taxonomy Levels
(KL1: Remembering, KL2: Understanding, KL3: Applying, KL4: Analyzing, KL5: Evaluating, KL6: Creating)
CO – Course Outcomes