



# श्री माता वैष्णो देवी विश्वविद्यालय

SHRI MATA VAISHNO DEVI UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE & ENGG

Subject: Introduction to Programming With C

Duration: 1 hour

Max. Marks: 20

Course code: CSL1021

Date of Exam: 12.10.17

1. Define functions with example. Why we use functions? Write a program to swap two variables using functions. (5)
2. Write a program to accept marks of 30 students of a class in an array and then print average of marks. (4)
3. Write a program to accept two 3X3 matrices and then print addition. (4)
4. Write a program to illustrate the concept of call by value. (3)
5. Write a program on Linear Search using arrays. (4)

**SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA**  
**School of Computer Science & Engineering**

**B. Tech. (CSE/ECE/ME/ CE/EE) Minor-I Examination (Odd) 2018-19**

Entry No: **1 8 B E C O G G**

Total Number of Pages: [01]

Date: 31/08/2018

Total Number of Questions: [03 with sub part]  
Course Code: CSL 1022

Course Title: Introduction to C Programming

Time Allowed: 1.5 Hours

Max Marks: [10]

**Instructions / NOTE**

- Attempt All Questions.
- Assume an appropriate data / information, wherever necessary / missing.

**Section - A**

Q1.	<b>Answer the following:</b>	[03] CO1
	a) State the printf() statement to print out the value of <i>a</i> and <i>b</i> given below 1. float <i>a</i> =3.14;      2. double <i>b</i> =3.14;	
	b) What will be output of the following code: <pre>#include&lt;stdio.h&gt; int main(){ float f=5.5; float x; x=f%2; printf("%f",x); return 0; }</pre>	
	c) Assume that <i>a</i> =10, <i>b</i> =5, <i>c</i> =-5      R=( <i>a</i> < <i>b</i> )    ( <i>b</i> > <i>c</i> ) ; what will be the value of <i>R</i>	
	d) C variable cannot start with _____? 1. An alphabet 2. A number 3. A special symbol other than underscore 4. Both (b) and (c)	
	e) <i>j</i> =( <i>5</i> > <i>7</i> && <i>3</i> != <i>4</i> )? <i>2</i> : <i>3</i> ; What will be the value of <i>j</i> ?	
	f) Specify the correct order of evaluation for the expression <i>z</i> = <i>x</i> + <i>y</i> * <i>z</i> / (5 % 2) – 1 + 0.5 and compute the value of int <i>z</i> for <i>x</i> =2, <i>y</i> =3.5, <i>z</i> =3.	
Q2.	(a) Explain in brief structure of C program. Give Examples of various sections of the program.	[03] CO1
	(b) Briefly explain any three unary operators with their functionalities with the help of examples.	

**Section - B**

Q3.	(a) Write a program to read a character from the user. Check, if the character entered is an alphabet? If Yes, check if it is a lowercase alphabet? If Yes, print the equivalent uppercase alphabet. If No, then print the lowercase equivalent of the alphabet. If the entered character is not an alphabet, then print appropriate message. (Hint: Use Nested IF Control Statement) (b) Write an algorithm or Draw a Flowchart to find the smallest among the three-number entered by the user	[03] CO2, CO3, CO4 [01]

**Course Outcomes:** After Successful Completion of this Course, students shall be able to;

CO1: Knowledge and understanding of programming.

CO2: Ability to write simple programs in C language by using basic control structures (conditional statements, loops, switches, branching, etc.).

CO3: Understanding the concept of programming using functions, arrays, strings, pointers and structures, and implement the various operations on them.

CO4: Ability to create a programmable model for a problem given.

CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1	Q1,Q2	6	
CO2	Q3	4	
CO3	Q3		
CO4	Q3		

**SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA**

School of Computer Science &amp; Engineering

B. Tech. (CSE/ECE/ME/ CE/EE) Minor-1 Examination (Odd) 2018-19

Entry No: 

1	8	B	E	C	0	6	6
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Total Number of Pages: [02]

Date: 15/10/2018

Total Number of Questions: [03]

**Course Title: Introduction to C Programming****Course Code: CSL 1022****Time Allowed: 1.5 Hours****Max Marks: [30]****Instructions / NOTE**

- i. Attempt All Questions.
- ii. Assume an appropriate data / information, wherever necessary / missing.
- iii. ALL Programming Questions (Q3) MUST HAVE PROPER COMMENTS AND EXPLANATION OF THE LOGIC

**Section – A**

Q1.	<b>Answer the following (Give proper justifications to your answer):</b>		[05]	CO1 CO3
	<p>(a) State the Output of the following code:</p> <pre>#include&lt;stdio.h&gt; int main() { int i, a[5]={1,2,3,4,5}; for(i=0;i&lt;4;i++) printf("%d ",i); return 0; } 1) 12345 2) 1 2 3 4 5 3) ERROR 4) None of the above</pre> <p>(b) What will be output of the following code:</p> <pre>#include&lt;stdio.h&gt; int main() { int a[3][3]={1,1,1,2,2,2,3,3,3}; int i,j; for(i=0;i&lt;2;i++) for(j=0;j&lt;2;j++) printf("%d ",a[i][j]); printf("\n"); return 0; } 1) 1 1 1 2 2 2 3 3 3 2) 1 1 2 2 3 3 3) 3 4) None of the above</pre>	<p>(c) State the Output of the following code:</p> <pre>#include&lt;stdio.h&gt; int main() { int i=0; for( ; i++ ; ) printf("%d ",i); return 0; }</pre> <p>(d) State the Output of the following code:</p> <pre>#include&lt;stdio.h&gt; int main() { int i=0; switch(i) { default: printf("No Match\n"); break; case 1: printf("ONE\n"); case 1-1: printf("ONE minus ONE\n"); case 2-1: printf("TWO minus ONE\n"); } return 0; }</pre> <p>(e) State the Output of the following code:</p> <pre>#include&lt;stdio.h&gt; int main() { int i , j; for( i=1 ;i&lt;3;i++) { for(j=1;j&lt;4;j++) { if(j == 2)break; printf("%d %d ",i,j); }}return 0; }</pre>		
Q2.	<p>Answer the Following:</p> <p>(a) Explain briefly the structure and the working of switch—case statement? Is switch—case statement replacement of if statement? Explain with the help of example.</p> <p>(b) What are Arrays? State the difference between 1-dimension arrays and Multi dimension arrays in terms of application and memory mapping.</p>		[05]	CO1

Section - B			
Q3.	(a) Write a C program for a menu driven program which has following options: 1. Factorial of a number. 2. $n^n$ (without using in-built pow() function) 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 the 'Exit' option the program should continue to work. (Hint: Use do—while Iterative Control Statement)	[06]	CO 1 CO 2 CO 3 CO 4
	(b) Write a program to check if a given number is a perfect number or not. (Hint: an integer is said to be perfect if the sum of its factors (including 1) is equal to the number itself. E.g: $6 = 1 + 2 + 3$ )	[04]	
	(c) Write a program to read “n” numbers in an array. Your program must copy the elements of the array into another array in reverse order.	[05]	

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CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1	Q1,Q2,Q3	30	
CO2	Q3	15	
CO3	Q3,Q1	20	
CO4	Q3	15	

**SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA**  
**School of Computer Science & Engineering**  
**B. Tech. (CSE/ECE/ME/ CE/EE) Major Examination (Odd) 2018-19**

Entry No: **18BEC066**

Total Number of Pages: [02]

Date: 24/11/2018

Total Number of Questions: [03]

Course Title: Introduction to C Programming

Course Code: CSL 1022

Time Allowed: 3 Hours

Max Marks: [50]

Instructions / NOTE

- Attempt All Questions.
- ALL Programming Questions (Q3) MUST HAVE PROPER COMMENTS AND EXPLANATION OF THE LOGIC

Section - A

Q1	<b>Answer the following (Give proper justifications to your answer):</b>		[10]	CO CO
	(a) What is the output of this program? <pre>void main() {     int a=b=c=10;     a=b=c=50;     printf("\n %d %d %d",a,b,c); }</pre> A] 50 50 50      B] Compile Time Error C] 10 10 10      D] Three Garbage Value	(b) How would you declare a constant of 5 called "MYCONST"? <ul style="list-style-type: none"> <li>i) constant MYCONST = 5;</li> <li>ii) int myconst = 5;</li> <li>iii) #define MYCONST 5</li> <li>iv) #define MYCONST=5</li> </ul>		
	(b) State the Output of the following code:  <pre>#include &lt; stdio.h&gt; int z; int main() {     static int y;     printf("y=%d z=%d", y, z);     return 0; }</pre>	(b) Point out the compile time error (if any) in the following code:  <pre>#include &lt; stdio.h&gt; int main() {     int *p;     *p=100;     printf("%d ", *p);     return 0; }</pre>		
	(c) Given the statement,  DATE.dob.dd = 25;	(b) What will be the output?  <pre>#include &lt; stdio.h&gt; #define scanf "%s", "GEEKS for GEEKS" int main() {     printf( scanf );     return 0; }</pre>		
	Which of the following is true?	(b) Consider the following declaration of a 'two-dimensional array in C:  char a[100][100]; Assuming that the main memory is byte-addressable and that the array is stored starting from memory address 0, the address of a[40][50] is		
	1. structure dd is nested within the structure dob 2. structure dob is nested within the structure DATE 3. structure DATE is nested within the structure dob 4. None of the above			
	(d) What will be the output?  <pre>#include&lt; stdio.h&gt; int add(int x) {     ++x;     return(x); } int main() {     int I=3,J,K;     K=add(++I);     J=add(I++);     printf("I=%d J=%d K=%d", I, J, K);     return 0; }</pre>	(j) Choose the correct output:  <pre>#include&lt;stdio.h&gt; int main() {     typedef float f;     f fptr;     int fval = 90;     fptr = fval;     printf("%f\n", fptr);     return 0; }</pre>		
	(e) The function in 'C' for Dynamic memory allocation is/are:  a) malloc()      b) calloc() c) realloc()      d) All of the above	a) 9      b) 90 c) 90.000000      d) Error		

Q2	Answer the Following:	a) Demonstrate the difference between call by value and call by reference with the help of appropriate example.	[05]	CO1
		b) State how the arrays declared in the following program can be replaced using structures to store data of 30 employees of a company XYZ Ltd.? (2) According to you which is a better data structure between arrays and structures and why in the following case? (2)	[2 + 2 = 4]	CO2 CO3
		#include< stdio.h> int main() { int empcode[30]; /*array to store Employee name for each employee*/ char emp_name[30][20]; /*array to store department name for each employee*/ char emp_dept[30][10]; /*array to store department name for each employee*/ int emp_dateofjoin[30][3]; /*array to store values of date, month and year of date of join in three columns for each employee*/ ..... } }		

- c) Give appropriate example to explain how pre-processor macros are different from constant pre-processor definitions in C? (2) Define a macro to compute the area of a circle. (2)

[2 + 2 = 4]

### Section - B

Q3	a) Write a c program to enter n integer entries into an array, sort the elements, and print the sorted array elements.	[05]	CO 2 CO 3 CO 4
	b) Write a C Program to find the sum of all the numbers formed by 2 consecutive digits of four digit numbers. (Example: Number = <u>2415</u> , then your program must compute the sum of $24 + 41 + 15 = 80$ )	[07]	
	c) Write a <b>C function</b> to find the kth occurrence of an <b>even</b> number in a sequence of non-negative integers, and then call your function from main(). Your function should be according to the following declaration: int find_even(int k); <i>Assume a string of 10 words 10^th word - new K=10</i>	[07]	
	d) Write a program to store the information of 60 students using the array of structure <b>Student</b> having the following members: (Rollno, Name, GPA) Display the Roll numbers and Names of the students who have passed their Exam (i.e their GPA is 4 or above) and have scored GPA of 7 point or more.	[08]	

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CO4: Ability to create a programmable model for a problem given.

CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1	Q1, Q2	23	
CO2	Q2, Q3	40	
CO3	Q1, Q2, Q3	50	
CO4	Q3	27	

**SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA**

**B. Tech. (CSE/ECE/ME/Civil/Electrical) Minor Examination (Odd) 2019-20**

Entry No: **i 9 B C E 0 3 1**

Total Number of Pages: [02]

Date: 28.09.2019 Total Number of Questions: [15]

**Course Title: Introduction to C Programming  
Course Code: CSL 1022**

**Time Allowed: Time Allowed: 1.5 Hours**

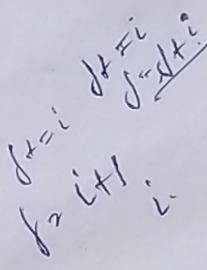
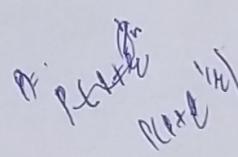
**Max Marks: [30]**

**Instructions / NOTE**

- Attempt All Questions.
- Support your answer with neat freehand sketches/diagrams, wherever appropriate.
- Assume any missing data to suit the Program/case / derivation / answer.
- Show every step while writing a program/Algorithm/Flowchart etc.
- Write Comments Properly while writing program.

**Section – A**

Q1.	Which of the following is an incorrect character constant: (A) 'S' (B) '*' (C) '9' (D) "D"	[01]	CO1
Q2.	Which of the following statement is wrong (A) S = 2.35; (B) M= 4 8 ; (C) V=S+M; (D) D=M+V;	[01]	CO1
Q3.	Consider the following variable declarations and definitions in C (i) int var_9 = 1; (ii) int 9_var = 2; (iii) int _ = 3; Choose the correct statement w.r.t. above variables? (A) Both (i) and (iii) are valid (B) Only (i) is valid (C) Both (i) and (ii) are valid (D) All are valid	[01]	CO1
Q4.	Which of the following is FALSE in C (A) Keywords can be used as variable names (B) Variable names can contain a digit (C) Variable names do not contain a blank space (D) Capital letters can be used in variable names	[01]	CO1
Q5.	What will be the value of N if N is an integer after the operation N = 3 / 6? (A) 0 (B) 0.5 (C) Cannot be determined (D) None of the above	[01]	CO1
Q6.	main( ) { int i = 10, j ; i >= 5 ? (j = 10) : (j = 15) ; printf( "\n%d %d", i, j ) ; }	[01]	CO2

Q7.	Write Output of the following Program: <pre>main() { int i = 1, j = 1 ; for ( ; ; ) { if ( i &gt; 5 ) break ; else j += i ; printf( "\n%d", j ) ; i += j ; } }</pre> 	[01]	CO2
Q8.	Write Output of the following Program: <pre>main() { int i ; for ( i = 1 ; i &lt;= 5 ; printf( "\n%d", i ) ) ; i++ ; }</pre> 	[01]	CO2
Q9.	Write Short Note on Flowcharts and Algorithms.	[02]	CO1
Q10.	State in brief the difference between the following: a) Break and Continue b) If-Else and Switch -Case Control Statement c) While and Do-While Loop Statements	[03]	CO1
<b>Section – B</b>			
Q11.	Write a C program to calculate Compound Interest.	[02]	CO2
Q12.	Write an algorithm, C Program and draw a flowchart for finding whether a number is odd or even?	[03]	CO2
Q13.	Write a C Program to calculate Factorial of a Number.	[04]	CO2
Q14.	Write a C program to check whether a number is prime or not.	[04]	CO2
Q15.	Write a C program to print the pattern. 1 2 2 1	[04]	CO2

### Course Outcomes:

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- CO4: Ability to create a programmable model for a problem given.

CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1	1,2,3,4,5,9,10	10	
CO2	6,7,8,11,12,13,14,15	20	

**SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA**

B. Tech. (CE/CSE/ECE/EE/ME) Major Examination (Odd) 2019-20

Entry No:

1 9 B C E D 3 1

Date: 06.12.2019

Total Number of Pages: [02]

Total Number of Questions: [15]

Course Title: Introduction to C Programming

Course Code: CSL 1022

Time Allowed: 3 Hours

Max Marks: [50]

Instructions / NOTE

- Attempt All Questions.
- Assume any missing data to suit the Program/ case / derivation / answer.
- Explain steps while writing a Program/ Algorithm/ Flowchart etc.
- Write Comments Properly while writing program.

**Section - A (25 marks)**

Q1.	What will be the output if you compile and execute the following c code?  ~~~~~ #include<stdio.h> int main() { signed int a=1; unsigned int b=1; if(a==b) printf("%d %d",a,b); else printf("Not equal"); return 0; }  (a) 1 1                 (b) -1 32767                 (c) -1 -32768                 (d) Not equal	[01]	CO1
Q2.	What is variable initialization and why is it important? Explain with the help of example.	[01]	CO1
Q3.	Give examples and briefly state the purpose of each escape sequence in C.	[01]	CO1
Q4.	Write only the loop statements and the code that will show the following output.  ~~~~~ 1 12 123 1234 12345	[01]	CO2
Q5.	Given the macro definition: CUBE(x) x*x*x What will be the output of the following statement? printf("%d",CUBE(3+3+0));	[01]	CO3
Q6.	State the difference between the following statements: scanf("%s",name); and gets(name); where name is a character array.	[01]	CO3
Q7.	Write output of the following Program: ~~~~~ #include<stdio.h> void predict(int, int *); void main( ) { int x=5, y=10; predict(x,&y); printf("%d %d",x,y); }  void predict(int a, int *b) { a=20; *b=30; }	[01]	CO3
Q8.	State the difference between a structure and union in C language with the help of example.	[01]	CO3
Q9.	Write an algorithm and draw a flowchart to check if the number is divisible by 2, 3 or 5.	[02]	CO1

Q10.	<p>Explain the following with the help of appropriate examples wherever required:</p> <ul style="list-style-type: none"> <li>(a) Explain the different techniques of problem solving in C with the help of examples.</li> <li>(b) Explain the different data types in C.</li> <li>(c) Classify and explain the operators on the basis of number of operands required by the operators. Give examples for each.</li> <li>(d) Differentiate between pass by value and pass by reference with the help of swap function to swap the values of two variables.</li> <li>(e) What are preprocessors? Explain each with the help of examples.</li> </ul>	[15]	CO1 CO1 CO1 [5* 3 Marks =15 Marks] CO3 CO3
<b>Section – B (25 marks)</b>			
Q11.	<p>Write a menu driven program to read a character from the user and perform any of the following operation on the character based on the choice of the user. Create functions to perform each operation by passing the character to each function.</p> <ol style="list-style-type: none"> <li>1. If the character is an alphabet then convert the case of the character</li> <li>2. Display the ASCII value of the character</li> <li>3. Find and display if the character is an alphabet, digit or special symbol.</li> </ol>	[05]	CO2 CO3 CO4
Q12.	<p>W.A.P to read total marks of N students. Find and print the average score of the class along with total number of student whose score is above average score and also print the highest score of the class.</p>	[05]	CO2 CO3 CO4
Q13.	<p>W.A.P to find and print the sum of any one of the diagonal of a matrix of the size MxM.</p>	[05]	CO2 CO3
Q14.	<p>In your program preset a password in a string which should be of minimum 8 characters long. Through your program ask user to enter the password and match it with the preset password. If the password matches print the message as "Correct Password" else print "Wrong Password" and ask the user to re-enter the password. Repeat the process of password matching. The maximum permitted chances to enter the password = 3. If this limit exceeds, print the message "Password Locked" and exit the program.</p> <p><b>Note:</b> Do not use inbuilt string functions.</p>	[05]	CO2 CO3 CO4
Q15.	<p>W.A.P to read 10 records of employees of ABC Ltd. in the structure named EMP having the following members: Emp_id, Emp_name, Emp_total_salary, Emp_total_sales_made. Display the record of all those employee's whose Emp_total_sales_made is greater than 10,000 Rupees.</p> <p>The employer has decided to give an increment of rupees 1,000 to all the employees whose Emp_total_sales_made is greater than rupees 10,000. Print the records of all the employees after making the changes.</p>	[05]	CO2 CO3 CO4

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CO4: Ability to create a problem solvable model for a problem given.

CO	Questions No.	Total Marks	Total Number of Students (to be appeared in Exam)
CO1	Q1,2,3,9,10	14	95
CO2	Q4,11,12,13	10	95
CO3	Q5,6,7,8,10	19	95
CO4	Q 11,12,14	07	95