

End Term Examination, Odd Semester, 2016-17

CSE 1101 : Fundamentals of Computer & Programming

Time: 02 ½ Hours

Max. Marks: 40

Section – AAttempt All Questions.

(1x16=16)

- I. Give details of 3rd generation of computer based on
 - (i) Hardware
 - (ii) Software
 - (iii) Computing Characteristics and
 - (iv) Their Application.
- II. What is the significance of the base of number?
- III. Explain 4GL.
- IV. Differentiate between Linker and Loader.
- V. Draw the control structures (Sequence, Selection, and Iteration) for the flowchart.
- VI. What do you understand by identifiers and keywords?
- VII. Differentiate between local variable and global variable.
- VIII. Explain the difference between declaration and definition?
- IX. Give the difference between operator precedence and associativity.
- X. Write a short note on goto statement. As a programmer would you prefer to use this statement? Justify your answer.
- XI. When will you prefer to work with switch statement?
- XII. Change the following **for** loop into **while** loop.
int i;
for (i=10; i>0; i--)
printf ("%d", i);
- XIII. For an array declared as int arr[50], calculate the address of arr[35], if Base(arr)=1000 and w=2.
- XIV. Strcmp (str1, str2) returns 1 if

- XV. Which function adds a string to the end of another string?
(a) stradd() (b) strcat() (c) strtok() (d) strepy()
- XVI. Differentiate between gets() and scanf().

Section – B

Attempt Any Four Questions.

(3x4=12)

- I. Write a C Program to Sort 10 Numbers in Ascending Order using Bubble Sort.
- II. Explain the concept of two dimensional arrays with respect to string. Give example.
- III. How to declare and initialize two-dimensional arrays.
- IV. Give details of various operations on arrays.
 - a) Insertion an element at specified position
 - b) Deletion an element from a given position
- V. Consider a 10*5 two dimensional array **Marks** which has base address=2000 and the number of words per memory location of the array=2. Now compute the address of the element – Marks [8, 5] assuming that the elements are stored in row major order.

Section – C

Attempt Any Three Questions.

(4x3=12)

- I. How to access the elements of two-dimensional array. Write a program to read two dimensional array marks which stores marks of 5 students in 3 subjects. Write a program to display the highest marks in each subject.
- II. Explain the concept of bubble sort with the help of an example.
- III. What do you mean by linear search? Write a program to implement linear search.
- IV. Write a program to calculate the **Length** and find the **Reverse** of a given string.

End-Term Examination

Odd-Semester, 2017-18

Program: B. Tech. Branch: All Year: I Univ. Roll No.:

Subject with Code: Fundamentals of Computer & Programming (CSE1101)

Time: 3 Hour

Maximum Marks: 50

Section- A

Note: Attempt All Questions:

7 x 5= 35 Marks

I. Discuss the difference between while loop and do-while loop.

<pre>i) #include <stdio.h> int main() { int i = 1024; for (; i >>= 1) printf("GLA"); return 0; }</pre> <p>How many times will GLA be printed in the above program?</p>	<pre>ii) What will be the output? #include <stdio.h> int i; int main() { if (i); else printf("Else"); return 0; }</pre>
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II. What are the basic symbols of flowchart? Draw a flowchart to find the Fibonacci series till term ≤ 1000 .

III. You are given a two-dimensional 3×3 array starting from A[0][0]. You should add the alternate elements of the array and print its sum.

OR

Given a string, that contains special character together with alphabets ('a' to 'z' and 'A' to 'Z'), reverse the string in a way that special characters are not affected.

Examples:

Input: str = "a,b\$c"

Output: str = "c,b\$a"

Note that \$ and , are not moved anywhere.

Only subsequence "abc" is reversed

IV. Will the call `scanf("%d",i)` work? Give reasons for your answer.
What will be the output of the following program?

<pre>#include<stdio.h> int main() { unsigned int x = -1; int y = ~0; if (x == y) printf("same"); else printf("not same"); return 0; }</pre>	<pre>#include<stdio.h> int main() { int x; printf("%d",scanf("%d",&x)); /* Suppose that input value given for above scanf is 20 */ return 1; }</pre>
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V. Enlist the different types of operators that are included in C.
Distinguish between the following?

A) break and continue

B) Identifier and variable

VI. Perform the following conversions:

a) $(231.44)_8 = (\dots)_2$

b) $(1011001.101)_2 = (\dots)_{10}$

c) $(10.04)_{10} = (\dots)_{16}$

d) $(A6C2)_{16} = (\dots)_8$

e) $(ABC.F)_{16} = (\dots)_2$

VII. Write a program in C for the following operations on string without using built-in functions:

a) Copy a string into another

b) Compare b/w two strings

Section-B

(a) Attempt All Questions:

3 x 2 = 6 Marks

I. Trace all the steps of bubble sort on the following list:

4, 7, 2, 5, 6, 1, 8

- II. Write a program in "C" to print the position of a given element from a given array.
- III. Given an Array A consisting of N positive integers, Write a program in "C" to update X at location Y in the array and then print the sum of elements from range [L, R], i.e. Both L and R are inclusive.

(b) Attempt All Questions

3 x 3 = 9 Marks

- I. Let us consider string S. You are required to count the frequency of all the characters in this string. Write the program in "C" for any string given by user.

Example: Input string S = "ababcd"

Output a=2, b=2, c=1, d=1

- II. A, 25×4 matrix array DATA is stored in memory in 'row-major order'. If base address is 200 and $w = 4$ words per memory cell. Calculate the address of DATA [12, 3].
- III. A person is saying to his friend "my name is same as your name, but in reverse order". How will you confirm this statement by writing a program?

Printed page:

Univ. Roll No

End-Term Examination

Odd- Semester, 2018-19

B.Tech. /MCA 1 Year, I Sem.

C Programming (BCSC0001/ MCAC0002)

Time: 3 Hours

Maximum Marks: 50

Note: Attempt all questions.

Section-A

(7*5=35 Marks)

1. Write a program to calculate gross salary of an employee, given his basic pay (to be entered by the user), HRA=10% of the basic pay, TA=5% of the basic pay.
2. Write a program to read gender (M/F) and print corresponding gender using switch.
3. Write a program to enter a character and then determine whether it is a vowel or not.
4. Write a program to print prime numbers from 1 to 100.
5. Write a program to print the following pattern
A
AB
ABC
ABCD
ABCDE
6. Write a program to remove all spaces from a given string and print.
7. Write a program to print smallest number in an array.

P.T.O.

Section-B

Note: Attempt all questions.

(3*2=6 Marks)

Part-A

1. Write a program to find largest between three numbers.
2. Write a program to print product of digits(Number entered by keyboard).
3. Write a program print length of string (string entered by keyboard).

(3*3=9 Marks)

Part-B

1. Write a program to find factorial of a number using call by value (functions).
2. Write a program to add two numbers by using call by value method
3. Write a program to find sum of the array elements (pass an integer array to a function and return the sum).

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University Roll No:
End Term Examination, Even Semester 2018-19
B.Tech.(EC/ME/CE/EE), I Year, II Semester
BCSC0001: Computer Programming

Time: 3 Hours

Maximum Marks: 50

Section-A

Note: Attempt all questions.

(7*5=35 Marks)

- I. (a) Draw a flowchart to find greatest among three numbers.
(b) Write a program to check whether a given number is even or odd
(The use of % operator is not allowed).

- II. What will be the output of following C programs?

(a) #include <stdio.h>

int main()

{

printf(" \nC %% Program\n");

return 0;

}

(c) #include <stdio.h>

void main()

{

int a=3,b=5,c;

c=a&b;

printf("%d",c);

}

(d) #include<stdio.h>

void main()

{

int arr[5] = {1,2,3};

printf("%d %d",arr[1],arr[4]);

}

(b) #include<stdio.h>

void main()

{

int x = 6;

switch(x)

{

case 5 : printf("FIVE\n"); break;

default: printf("Invalid choice\n");

case 4: printf("FOUR\n"); break;

case 3: printf("THREE\n"); break;

case 2: printf("TWO\n"); break;

case 1: printf("ONE\n"); break;

}

}

(e) #include<stdio.h>

void main()

{

int i = 4;

while(i-- >= 0)

printf("%d ", i);

}

- III. In a class there are 10 students and each student under goes 5 subjects. Write a program to find out:
- a) Average marks of each student
 - b) Average marks of each subject

OR

Write a program to perform array rotation that takes three inputs: An array (a[]), size of array(n) and number of rotations (d). For example-

Input a[] = {1, 2, 3, 4, 5, 6, 7}, d = 2, n = 7

Output a[] = {3, 4, 5, 6, 7, 1, 2}

- IV. Write a program to input a number from user and check whether number is Strong number or not (Strong number is a special number whose sum of factorial of digits is equal to the original number. For example- 145 is a strong number. Since, $1! + 4! + 5! = 145$).
- V. Write a program to compare two strings without using string library function strcmp().
- VI. (a) Differentiate between call by value and call by reference with suitable example.
(b) Explain pointer to pointer and void pointer with an example.
- VII. (a) Write a program to find factorial of a number using pointer.
(b) Rewrite the following program using returnable function with argument(s)-

```
#include<stdio.h>
void main()
{
    int a,b,r=1,i;
    printf("Enter two numbers");
    scanf("%d%d",&a,&b);
    for(i=1;i<=b;i++)
        r=r*a;
    printf("Result is%d",r);}
```

Section-B

Note: Attempt all questions.

3 x 2 = 6 Marks

(a)

- i. How string is initialized. Explain with an example.
- ii. Write a program to calculate simple interest using pointer.
- iii. Write program to print the sum of the diagonal elements of a matrix.

Note: Attempt all questions.

3 x 3 = 9 Marks

(b)

- i. Write a program to sort the elements of an array in ascending order.
- ii. Explain the following string handling functions with an example- strcmp(), strcat() and strrev().
- iii. Write a program to print average of elements of one dimensional array using pointer.

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University Roll No:

End Term Examination, Odd Semester 2019-20

B.Tech. , CSE, I Year, I Semester

Computer Programming : BCSC 0001

Time: 3 Hour

Maximum Marks: 50

Section- A

Note: Attempt ANY FIVE Questions.

5 x 4 = 20 marks

- (I) Explain the term Associativity and Precedence with respect to operators in C. Write a program to find the value of A modulus B without using modulus operator.
- (II) Explain the difference between break and continue keyword with the help of a suitable example. Write a program to check a inputted number is prime or not.
- (III) Compare switch case with if else if ladder . Write a Menu Driven program for basic Arithmetic operations(+, -, *, /, %) using switch case.
- (IV) Explain different ways of initialization in array with the help of suitable examples. Write a program to input an array and print it in reverse order.
- (V) Write any 5 string handling functions in C. Write a program to input a string and copy it into another string without build in functions.
- (VI) What are the advantages of functions in C. Explain the difference between call by value and call by reference with the help of a suitable example.

Section- B

Note: Attempt ALL Questions.

5 x 3 = 15 marks

- (I) Write a program to input a 2D array of size m*n and find the sum of diagonal elements.
- (II) Write a program to find the maximum and minimum element in an array using dynamic memory allocation.
- (III) Write a program to find the value of binomial coefficient (nC_r) using function.
- (IV) Write a program to count the total no. of vowels , consonants , digits and special characters in a inputted string.
- (V) Show the process of bubble sort on the following array of 6 elements.
10 , 1 , 16 , 90 , 12 , 15

Section- C

Note: Attempt ANY THREE Questions.

3 x 5 = 15 marks

(I) a.) Find the output of the following.

1.) void main()

{

int a = 10;

int *p;

p=&a;

printf("%d %d %d %d", *p++, *p--, (*p)++, *p);

}

2.) void main()

{

int a = 1057;

char *p=(char*)&a;

printf("%d", *p);

}

b.) write a program to remove extra spaces from a string entered by user .

(II) a.) Write a program to input a 2D array of size m*n and print the transpose of it.

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. Find the address of a[35][75] using row and column major implementation.

(III) a.) Write a program to insert an element e in an array of size n at index i.

b.) Write a program to find the average of elements of an array by passing array to function.

(IV) Write short note on following with an example :-

1.)Generic Pointer

2.)NULL Pointer

3.)Dangling Pointer

4.)Wild Pointer

5.)Pointer to Pointer

Course Outcome

- CO1- Understand the basic concepts of problem solving skills.
- CO2- Work with user input to create fun and interactive programs.
- CO3- Use in-built functions and library defined in C language.
- CO4- Concept of operators in C
- CO5- Acquire programming skills in core computer programming: flow control structures, programming constructs like variables, conditional logic, and looping, switch.
- CO6- User defined functions and modular programming with functions.
- CO7- Use of 1-D and 2-D Array in C programming and its implementations.
- CO8- Concept of pointers in C.
- CO9- Working with strings.

Printed Pages:04

University Roll No.

End Term Examination, Odd Semester 2022-23 B.Tech (CS/EC(CS)), Year 1ST, Semester 1ST BCSG 0002 Computer Programming

Time: 3 Hours

Maximum Marks: 50

Instruction for students:

- 1-Read question paper carefully.
- 2-Don't over write.
- 3-Write the complete code in one place neatly.
- 4-Maintain appropriate curly braces, parenthesis, and syntax while writing program.
- 5-Commenting code is optional.

Section – A

Attempt All Questions

4 X 5 = 20 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	a) What do you mean by the Scope of the variable? b) What are static variables and functions?	2 + 2	CO5	R	F
2	a) what is the output of the following program <pre>#include<stdio.h> void main() { int expr=1; switch(expr) { case 1: printf("One\n"); case 2: printf("Two\n"); default: printf("Three\n"); } }</pre> b) Write a C program to create menu driven calculator that performs basic arithmetic operations (add, subtract, multiply and divide) using switch case and functions. The calculator should input two numbers and an operator from	1 + 3	CO5	U	PC

	<p>user. It should perform operation according to the operator entered and must take input in given format.</p> <p><number 1> <operator> <number 2></p> <p>Example</p> <p>Input</p> <p>5.2 - 3</p> <p>Output</p> <p>2.2</p>				
3	<p>a) What are the valid places where the programmer can apply Break Control Statement?</p> <p>b) A soldier wants to buy w bananas in the shop. He has to pay k dollars for the first banana, $2k$ dollars for the second one and so on (in other words, he has to pay $i \cdot k$ dollars for the i-th banana).</p> <p>He has n dollars. How many dollars does he have to borrow from his friend soldier to buy w bananas?</p> <p>Input Format</p> <p>The first line contains three positive integers k, n, w, the cost of the first banana, initial number of dollars the soldier has and number of bananas he wants.</p> <p>Constraints</p> <ul style="list-style-type: none"> $1 \leq k, w \leq 1000$ $0 \leq n \leq 109$ <p>Output Format</p> <p>Output one integer — the amount of dollars that the soldier must borrow from his friend. If he doesn't have to borrow money, output 0.</p> <p>Sample Input 0</p> <p>3 17 4</p> <p>Sample Output 0</p> <p>13</p>	<p>1</p> <p>+</p> <p>3</p>	CO7	A	C
4	<p>Write a program to take an array of integers from user and print Product of all its Even elements.</p> <p>Sample input:</p> <p>1 2 3 4 5</p> <p>Sample output:</p> <p>8</p>	4	CO7	A	PC

5	<p>What are pointers in C? Explain following with example.</p> <p>wild pointer</p> <p>Null pointer</p> <p>Void pointer</p> <p>Dangling pointer</p> <p style="text-align: center;">Or</p> <p>You are given a string where each char of string represents a candy. Find the total different types of candies.</p> <p>Input Format</p> <p>First line contains T, number of testcases, Next T lines contains a string S representing box of candies.</p> <p>Constraints</p> <p>$0 < S < 100000000$</p> <p>Output Format</p> <p>For each testcase in T, print number of types of candies.</p> <p>Sample Input 0</p> <p>1</p> <p>abccca</p> <p>Sample Output 0</p> <p>3</p>	4	CO8	E	D

Section – B

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	<p>Write a program to take two strings from user and concatenate them also add a space between them using strcat() function.</p> <p>Sample input:</p> <p>JAI</p> <p>GLA</p> <p>Sample output:</p> <p>JAI GLA</p>	3	CO9	A	F
7	<p>Write the output of the following and also explain the working.</p> <pre>#include<stdio.h> int main(){ int a[2]={21,22}; int *p; p=a; printf[["%d %d",*p,*(p+1)]; return 0; }</pre>	3	CO8	An	PC

8	a) What are functions in C. b) Write a function to take two integers as argument and return area of circle of them.	1 + 2	CO6	An	D
9	Explain all string library functions with example.	3	CO9	R	S
10	What is the difference between while (0) and while (1)? Difference between malloc() and calloc() functions?	1.5 + 1.5	CO8	E	S

Section - C

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
11	Write a program to take two strings as input from user and print the string which has more characters. Sample input: JAI GLA GLA Sample output: JAI GLA	5	CO9	E	P
12	Write a C program to input two or more numbers from user and find maximum and minimum of the given numbers using functions. How to find maximum and minimum of two or more numbers using functions in C programming. Example Input Input two numbers: 10 20 Output Maximum = 20 Minimum = 10	5	CO8	C	PC
13	Write a C program to input elements in an array and reverse the array using pointers. How to reverse an array using pointers in C programming? Logic to reverse an array using pointers in C. Example Sample Input: Input array elements: 10 20 30 40 50 60 70 80 90 100 Sample Output: Reversed array: 100 90 80 70 60 50 40 30 20 10	5	CO7	E	P

Course: Computer Programming (BCSG 0002)**Course Outcome**

- CO1- Understand the basic concepts of problem solving skills.
 CO2- Work with user input to create fun and interactive programs.
 CO3- Use in-built functions and library defined in C language.
 CO4- Concept of operators in C
 CO5- Acquire programming skills in core computer programming, flow control structures, programming constructs like variables, conditional logic, and looping, switch.
 CO6- User defined functions and modular programming with functions.
 CO7- Use of 1-D and 2-D Array in C programming and its implementations.
 CO8- Concept of pointers in C.
 CO9- Working with strings.

Printed Pages: 04

University Roll No.

End Term Examination, Even Semester 2022-23
B.Tech (AIML/DA/CCV/CSF/IIOT/CE/ME), I Year, II Semester
BCSG 0002 Computer Programming

Time: 3 Hours

Maximum Marks: 50

Instruction for students:

- 1-Read question paper carefully.
- 2-Don't over write.
- 3-Write the complete code in one place neatly.
- 4-Maintain appropriate curly braces, parenthesis, and syntax while writing program.

Section – A*Attempt All Questions***4 X 5 = 20 Marks**

No.	Detail of Question	Marks	CO	BL	KL
1	Write a program to print the sum of digits of given a four digits' integer value. Note: don't use any control structure statements Input Format The input contains a single four digits' number. Output Format Print the sum of the digits Sample Input 1201 Sample Output 4	4	CO1	A	P
2	Name any four string function in C-Programming and explain each with suitable example.	4	CO9	R	PC
3	Write a program to find sum of all elements of each row of a matrix. Input Format Take two integers m, n from the user where m->rows and n->columns. Take mxn elements from the user. Output Format It should print the sum of each row elements of the matrix. Sample Input 2 2 1 2 3 4 Sample Output 3 7	4	CO7	An	P
4	Complete the following code to input elements in array and search whether an element exists in array or not.	4	CO7	An	D

	<pre>#include <stdio.h> #define MAX_SIZE 100 // Maximum array size void search_element(int arr[], int size, int toSearch){ <u>Complete the code here,....</u> } int main() { int arr[MAX_SIZE]; int size, i, toSearch; /* Input size of array */ printf("Enter size of array: "); scanf("%d", &size); /* Input elements of array */ printf("Enter elements in array: "); for(i=0; i<size; i++){ scanf("%d", &arr[i]); } printf("\nEnter element to search: "); scanf("%d", &toSearch); search_element(arr, size, toSearch); return 0; }</pre>				
5	<p>You are given a string where each char of string represents a candy. Find the total different types of candies.</p> <p>Input Format First line contains a string S representing box of candies.</p> <p>Output Format print number of types of candies.</p> <p>Sample Input abceca</p> <p>Sample Output 3</p>	4	CO8	E	D

Section – B

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	<p>Capitalization is writing a word with its first letter as a capital letter. Your task is to capitalize the given word.</p> <p>Note that during capitalization all the letters except the first one remains unchanged. Word consists of lowercase and uppercase English letters.</p> <p>Sample Input apPLe</p> <p>Sample Output ApPLe</p>	3	CO9	A	PC
7	<p>Complete the following code to Reverse the number.</p> <pre>#include <stdio.h> int main() { int n, reverse = 0, remainder; printf("Enter an integer: "); scanf("%d", &n);</pre>	3	CO5	An	M

	<pre> while (n != 0) { <u>complete the code here</u> } printf("Reversed number = %d", reverse); return 0; } </pre>				
8	<p>One hot summer day Pete and his friend Billy decided to buy a watermelon. They chose the biggest and the ripest one, in their opinion. After that the watermelon was weighed, and the scales showed w kilos. Pete and Billy are great fans of even numbers, that's why they want to divide the watermelon in such a way that each of the two parts weighs even number of kilos, at the same time it is not obligatory that the parts are equal that's why you should help them and find out, if they can divide the watermelon in the way they want. For sure, each of them should get a part of positive weight.</p> <p>Input Format The first (and the only) input line contains integer number w - the weight of the watermelon bought by the boys.</p> <p>Constraints $1 \leq w \leq 100$</p> <p>Output Format Print YES, if the boys can divide the watermelon into two parts, each of them weighing even number of kilos; and NO in the opposite case.</p> <p>Sample Input 8</p> <p>Sample Output YES</p> <p>Explanation For example, the boys can divide the watermelon into two parts of 2 and 6 kilos respectively (another variant: two parts of 4 and 4 kilos).</p>	3	CO6	C	F
9	<p>a) Complete the following code to print the factorial of the input number</p> <pre> #include<stdio.h> int main() { int i, fact=1, number; printf("Enter a number: "); scanf("%d", &number); for(i=1; i<=number; i++){ <u>complete the code here</u> } printf("Factorial of %d is: %d", number, fact); return 0; } </pre>	1.5 + 1.5	CO4	C	S

	<p>b) Write the output of the following and also explain the working.</p> <pre>#include<stdio.h> int main(){ int a[4]={100, 200, 300, 400}; int *p; p=a; printf("%d, %d", 2[a], *(p+2)); return 0; }</pre>				
10	<p>a) What is the output of the following program</p> <pre>#include<stdio.h> int main(){ int a, b = 5, c = 5; a = c == b; printf("%d", a); return 0; }</pre> <p>b) Allocate a memory block for 10 integers using malloc() and then reallocate it to make it for 40 integers using realloc().</p>	<p>1 + 2</p>	CO8	R	S

Section – C

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
11	Write any five built-in functions in math library and Explain with suitable examples.	5	CO3	R	PC
12	<p>Write a C program to input two or more numbers from user and find maximum and minimum of the given numbers using functions.</p> <p>Example:</p> <p>Input</p> <p>Input two numbers: 10 20</p> <p>Output</p> <p>Maximum = 20 Minimum = 10</p>	5	CO8	C	M
13	<p>Write a program to take two strings as input from user and print the string which has more characters.</p> <p>Sample Input</p> <p>Love your family Opportunities don't happen</p> <p>Sample Output</p> <p>Opportunities don't happen</p>	5	CO9	An	P