

## FACULTY OF ENGINEERING

BE I-Semester (AICTE) (Main &amp; Backlog) Examination, Dec. 2019 / Jan. 2020

Subject: Programming for Problem Solving

Max. Marks: 70

Time: 3 Hours

Note: Answer all questions from Part A and any five questions from Part B

## PART - A (2 x 10 = 20 Marks)

- 1) What are the steps to solve logical and numerical problems?
- 2) Describe Flowchart/Pseudo code with example.
- 3) What would be the output for the given program?

```

Int main()
{
    Int i = 5
    For (j, i < 1, 1--)
        Printf ("%d", i);
    Return 0;
}

```

- 4) Why conditional branching is required? What is the syntax of conditional branching statement.
- 5) Write a program for finding roots of equations.
- 6) Differentiate between functions and recursive functions.
- 7) Write the syntax and example of Union variable.
- 8) Write a program for student information using structure (fields are stname, str no. St add)
- 9) What is wrong with the following code segment?

```

Int * a;
*a = 40;

```

- 10) Write short notes on File Handling Operation.

## PART - B (50 Marks)

11. a) Write an algorithm to check whether the given number is even or odd. (5)
- b) Write a program to print prime from numbers one. (5)
12. a) Define compiler? What are the components of computer system explain in detail. (5)
- b) Write a program to print the digits in reverse order. (5)
13. a) Describe strings and string types with an Example. (5)
- b) Write a program to find the addition of two matrices. (6)
14. a) What is call by value and call by reference? (4)
- b) Can main() be called recursively? (4)

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15. a) What are file modes? Write a program to copy one existing file. (8)  
b) What is EOF? When is EOF used? (2)
16. a) Write a recursive program for string palindrome. (8)  
b) What is the return type of print()? (2)
17. a) Why do string subscripts ends with null character? (2)  
b) Create a structure containing 6 fields? Address1, name city, State, ID and Zip. (8)  
Create a type call record (using pointer structure)

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Code No. 11609

FACULTY OF ENGINEERING

B.E. I – Semester (Main) Examination, November / December 2018

Subject : Programming for Problem Solving

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part-A & any five questions from Part-B.

PART - A (20 Marks)

- 1 Write an algorithm for computing the sum of digits in a number. (2)
- 2 What are the advantages of structured programming? (2)
- 3 Develop an infinite loop using while construct. (2)
- 4 If a string 'str' contains a string literal "Oxford University Press", thus is it legal to print the string using the statement `print (str)` ? Justify your answer. (2)
- 5 Why is a function prototype required? (2)
- 6 Write a function for swapping two values without using temporary variable. (Use parameter passing by reference). (2)
- 7 Differentiate between recursion and iteration with an example. (2)
- 8 Define structure. How is it different from array? (2)
- 9 What will be the output of the following program?  
in main ( )  
{  
    int val = 5;  
    int \*ptr = &val;  
    printf ("%d %d", ++val, \*ptr);  
    return 0;  
}
- 10 What is the difference between `arr` and `&arr` when `arr` is an array name, though both displays the base address of the array? (2)

PART - B (50 Marks)

- 11 (a) What do you mean by high-level and low-level programming languages? Differentiate between them. (4)
- (b) Write an algorithm to compute and print the sum of the following series (6)

$$x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$



Code No. 11609

. 2..

- 12 (a) Write program to print the second largest number among a list of number using an array. (6)  
(b) Distinguish between break and continue statement. (4)
- 13 Consider the array (10)  
1 2 3 4 5 6 7 8 9  
Construct the binary search algorithm for finding the key = 7.
- 14 Write a C program to store the data of n employees where n is given by the user.  
(a) use a function to display the employee records in ascending order of their salary. (5)  
(b) Use a function to display the department wise employee records. (5)
- 15 (a) Write a program that open a file and counts the number of characters. The program should print the number of characters when finished. (6)  
(b) Assume you have declared an array of structures and that ptr is a pointer to the first array element. How would you change ptr to point to the second array element? (4)
- 16 (a) Write a program to read a string and convert alpha beta from lower case letters to capital letters. (5)  
(b) What is the difference between %f, %g and %C format specifiers when used to display a float value? Give an example. (5)
- 17 (a) Write a C program to remove the duplicates from an array. (6)  
(b) Explain the use of pointers pointers in self-referential structures. (4)

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## FACULTY OF ENGINEERING

B. E. (CBCS) I – Semester (Backlog) Examination, December 2019

Subject: Computer Programming &amp; Problem Solving

Max. Marks: 70

Time: 3 hours

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

## PART – A (20 Marks)

1. What is Pseudo code? (2)
2. Mention the difference between declaring a variable and defining a variable. (2)
3. What would be the output from the given program? (2)
 

```
int main()
{
    int i;
    for (i = 5; ++i; i- = 3)
        print f ("%d", i);
    return 0;
}
```
4. In recursion, what instance of the problem in Fibonacci series can serve as the base case? (2)
5. List any four types of preprocessor directive in C and its explanation. (2)
6. Why is it necessary to give the size of an array in an array declaration? (2)
7. What is wrong with the following code segment? (2)
 

```
int *P;
*P = 10;
```
8. List out any four string manipulation functions with description. (2)
9. What is the use of bit field? Illustrate with an example. (2)
10. Define stream. (2)

## PART – B (50 Marks)

11. (a) Write an algorithm for withdrawing Rs.1,000/- from the bank. (5)
- (b) Write a short notes on, with an example (2 ½ + 2 ½ =5)
  - (i) Logical operators.
  - (ii) Increment and decrement operators.
12. Distinguish between the following: (5+5=10)
  - (a) do-while and while loop.
  - (b) break and continue.
13. (a) What is the advantage of using arrays? Give the syntax for declaration, accessing and printing one dimensional array. (6)
- (b) What is the scope of a preprocessor directive? (4)



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14. Using Pointers, write a function that receives a character string and a character as argument and deletes all occurrences of this character in the string. (10)
15. (a) Write a program using structures to display the following information for each customer name, account number street, city, old balance, new balance, status. (3)
- (b) Write a program to display the contents of a file, 10 lines at a time. (7)
16. Write a C program that displays the position (or) index in the string S where the string T begins, (or) -1 if S does not contain T. (10)
17. (a) Write a brief note on auto and static storage classes. (5)
- (b) Discuss call by reference with an example. (5)

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OU - 2451

**FACULTY OF ENGINEERING****B. E. (AICTE) II – Semester (Supply.) Examination, December 2019****Subject: Programming for Problem Solving****Time: 3 hours****Max. Marks: 70****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (20 Marks)**

1. Where a program is stored and executed?
2. How to translate the algorithms to programs (C language) give one example.
3. Why Arithmetic expression? What are they?
4. Define string and give example are required.
5. For a given sequence, apply Bubble Sort method and show steps.  
10, 4, 50, 1
6. What is the idea of call by reference?
7. Write a program for factorial of a given number.
8. What are array of Unions?
9. What is the use of pointers?
10. What is the difference between array and linked list?

**PART – B (50 Marks)**

11. (a) Briefly explain the steps in compilation and execution of a program written in high level language. (5)
- (b) What are the steps to solve logical and numerical problems? (5)
12. (a) Write a program to convert the binary to octal number? (5)
- (b) What is character array? Write a program for student's marks and divisions. (5)
13. (a) Write a program to compute the square root of a given number without using pow() function of the Math library. (6)
- (b) How do you define searching? What are they? Give example for any one method. (4)
14. (a) Write a C program to reverse a sentence using recursion. (6)
- (b) How do you access members of a structure? Give an example. (4)
15. (a) Why typed of in C? Give an example for nested structures. (5)
- (b) Define structure type book that would contain book name, author, pages and price. Write a program to read this data using member operator (.) and display the same. (5)
16. (a) 

```
int main ( )
{
    Char *ptr = "Geeksquiz";
    printf ("%cn", *4*&*ptr);
    return 0;
}
```

 For this program what is the output and what is the error name? (5)
- (b) What are the uses of pointers in self-referential structures discuss in detail. (5)
17. (a) What are the file handling function? Write a program to create a file and store information. (5)
- (b) How to pass arrays to functions? Explain with example. (5)

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**FACULTY OF ENGINEERING**

B.E. I-Semester (Suppl.) Examination, June / July 2017

Subject : Computer Programming and Problem Solving

Time : 3 hours

Max. Marks : 70

**Note:** Answer all questions from Part-A. Answer any FIVE questions from Part-B.**PART - A (20 Marks)**

1. Convert the given Binary number into its equivalent Octal and decimal number systems i) 1110.1001  $16_2$  ii) 11110101  $\rightarrow 365$  2  
2
2. What is the output for the program given below?  

```
#include <stdio.h>
void main ( )
{
    int x = 5, y, a = 5;
    y = x * a + 1;
    x += y * a;
    printf ("%d %d", x, y);
}
```

$x = 5$   
 $y = 25$   
 $x = 185$   
 $y = 30$

2
3. Write the syntax of switch statement. Give an example. 2
4. Differentiate between while and do-while. 2
5. Write a C function to find the greatest of three integers. 2
6. Declare a two dimensional array of size 15 and 5. Write C-statements to declare and read elements into that two dimensional array. 2
7. If the following numbers 10, 19, 30, 40, 79, 89, 98, 100, 120, 150, 300 are input to the binary search algorithm how many comparisons are done to find the number 120. 3
8. What is the output of the following code fragment?  

```
int x[4] = {4, 5, 9, 10};
int * ptr = x;
ptr += 2;
printf ("%d", *ptr);
```

9

2
9. Define a structure. Give example and write the number of bytes required to store the structure variable. 2
10. What is the difference between opening a file in 'write' mode and 'append' mode? 2

**PART - B (50 Marks)**

11. a) One Apple contains about 225 calories. A person burns up 100 calories by running a mile. Write an algorithm which asks a person to type in the number of apples he/she wants to eat and displays the number of miles he/she should run to burn up the calories. 5  
 b) Draw flowchart to print the first and second largest number among three numbers. 5
12. a) Write a C program to print the Fibonacci series. 5  
 b) Write a C program to find the average of 'n' numbers using for-loop and without using arrays. 5



- 13/ a) Explain the selection sort technique to sort 'n' numbers. 5  
b) Write a C program to check whether the given matrix is identity matrix (or) not. 5
- 14/ a) Differentiate between call by value and call by reference with suitable example. 3  
b) Write two C programs that calculate power of a number using recursion and iteration? Compare two approaches. 7
- 15/ a) Explain the different string handling functions. Give examples. 5  
b) Write a C program to check if the given string is a palindrome or not. 5
- 16/ a) What are the arithmetic operations that can be performed using pointer variables? Explain with example. 5  
b) Write a C program to search for a given value in an array using binary search technique. 5
- 17/ Write short notes on the following :  
a) Storage classes 4  
b) Dynamic memory allocation 3  
c) Unions 3
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## FACULTY OF ENGINEERING

B.E. I-Semester (CBCS) (Supple.) Examination, May / June 2018

Subject: Computer Programming &amp; Problem Solving

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from Part-A &amp; any Five questions from Part-B.

## PART-A (2x10=20Marks)

1. What is the difference between declaration and definition of a Variable?
2. Mention the need for Associativity of Operators with an example.
3. How to choose between while and Do-while loops in Programming?
4. Is function an integral component of every C program?
5. List out the different phases of compilation of C program
6. Mention the applications of arrays
7. Differentiate between malloc and calloc memory allocation functions
8. What is the difference between string and a character in C programming?
9. Mention different ways to access the members of the structures with examples.
10. Define streams.

Binary  
line  
Sele  
Bubble

recap year

## PART-B (5x10=50 Marks)

11. a) Explain increment and decrement operators in c with examples 5  
b) convert  $(150)_{10}$  to octal equivalent 5
12. a) Differentiate iterative and Recursive functions. Write a recursive function for finding GCD of a number 6  
b) Elaborate on scope and lifetime of the variables in C. 4
13. a) Is a macro function call is efficient than normal function call. Justify 5  
b) Write an algorithm for Selection sort, with an example. 5
14. Give three variables x,y,z write a function to circularly shift right values. In other words if  $x=5, y=8, z=10$  after circular shift  $y=5, z=8, x=10$ . Call the function with variables a,b,c to circularly shift their values 10
15. Create a structure to specify data on students given below 10  
Roll No, Name, Department, Course, Year of Joining  
A typical student's data will be 1456 M.Raghu E.C M.E 1994  
Assume that there are not more than 500 students in the college  
(i) write a function to print names of all students who joined in a particular year  
(ii) Write a function to print the data of a student whose roll number is given
16. a) What are escape sequences in C languages? 5  
b) Explain pointers to Arrays in C. 5
17. Write short notes on :  
a) Command line arguments in C 5  
b) Self referential structures 5

**FACULTY OF ENGINEERING****BE I-Semester (Main & Backlog) Examination, December / January 2017-18****Subject: Computer Programming and Problem Solving****Time: 3 hours****Max. Marks: 70****Note: Answer all questions from Part A and any five questions from Part B.****PART- A (2x10=20 Marks)**

1. Explain conditional operator in C with an example.
2. What is the difference between a 'C' expression and a 'C' statement?
3. Describe Goto statements. Mention its advantages and disadvantages.
4. What are actual and formal parameters in C language?
5. Can one dimensional array be passed as function arguments in C language?\*
6. Explain #define directive and its usage.
7. What is memory leak in C?
8. What is difference between determining the length of a string and character Array using sizeof operator and strlen ()?
9. Define Bitfield and its usage with an example.
10. What is notion of stream in C programming?

**Part – B (5x10=50 Marks)**

11. a) Explain in detail about cast operator in C, with examples. [5]  
b) Explain different phases of compilation of a C program with example. [5]
12. a) Elaborate on different conditional statements in C with example. [6]  
b) Discuss on intufunction communication with examples. [4]
13. a) Explain preprocessor directives and their uses in C program. [5]  
b) Can Multidimensional arrays be passed as function arguments in C, explain with an example. [5]
14. a) Discuss on Memory allocation functions in C with examples. [6]  
b) Elaborate on String functions. [4]
15. a) Explain nested structure in C with example. [6]  
b) How unions differ from structures in C? [4]
16. a) Write short notes on: [10]  
(a) Void pointer  
(b) Type definition
17. Discuss on Standard library input/output functions. [10]

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## FACULTY OF ENGINEERING

B.E. I – Semester (Main) Examination, November / December 2018

Subject : Programming for Problem Solving

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part-A &amp; any five questions from Part-B.

## PART – A (20 Marks)

- 1 Write an algorithm for computing the sum of digits in a number. (2)
- 2 What are the advantages of structured programming? (2)
- 3 Develop an infinite loop using while construct. (2)
- 4 If a string 'str' contains a string literal "Oxford University Press", thus is it legal to print the string using the statement print (str) ; ? Justify your answer. (2)
- 5 Why is a function prototype required? (2)
- 6 Write a function for swapping two values without using temporary variable. (Use parameter passing by reference). (2)
- 7 Differentiate between recursion and iteration with an example. (2)
- 8 Define structure. How is it different from array? (2)
- 9 What will be the output of the following program?  

```

in main ( )
{
    int val = 5;
    int *Ptr = &val;
    printf ("%d %d", ++val, *ptr);
    return 0;
}

```
- 10 What is the difference between arr and &arr when arr is an array name, though both displays the base address of the array? (2)

## PART – B (50 Marks)

- 11 (a) What do you mean by high-level and low-level programming languages? Differentiate between them. (4)
- (b) Write an algorithm to compute and print the sum of the following series (6)
$$x = \frac{x^3}{3!} + \frac{x^3}{5!} + \frac{x^3}{7!} + \dots$$
- 12 (a) Write program to print the second largest number among a list of number using an array. (6)
- (b) Distinguish between break and continue statement. (4)
- 13 Consider the array  
1 2 3 4 5 6 7 8 9  
Construct the binary search algorithm for finding the key = 7. (10)
- 14 Write a C program to store the data of 'n' employees where n is given by the user.
  - (a) use a function to display the employee records in ascending order of their salary. (5)
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- 15 (a) Write a program that open a file and counts the number of characters. The program should print the number of characters when finished. (6)
- (b) Assume you have declared an array of structures and that ptr is a pointer to the first array element. How would you change ptr to point to the second array element? (4)
- 16 (a) Write a program to read a string, and convert alpha beta from lower case letters to capital letters. (5)
- (b) What is the difference between %f, %g and %C format specifiers when used to display a real value? Explain with an example. (5)
- 17 (a) Write a C program to remove the duplicates from an array. (6)
- (b) Explain the use of pointers in self-referential structures. (4)