FACULTY OF ENGINEERING
B.E. (Civil/CSE/CME&DS) (AICTE) I – Semester (Main & Backlog) Examinations, March / April 2022
Subject: Programming for Problem Solving

Time: 3 Hours   **Max. Marks: 70**

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each Question carries 14 Marks.

(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.

(iii) Missing data, if any, may be suitably assumed.

1.
- (a) Enlist any 3 difference between Object and Executable code?
- (b) What are the applications of arrays?
- (c) Write the pseudo code for bubble sort?
- (d) What is recursion and give example?
- (e) List out the various operations on Files?
- (f) Write a code snippet for self-referential structure?
- (g) Write a C program to perform swapping without using temporary variable?

2. (a) Draw and explain the block diagram of the computer?

(b) Draw the flowchart for greatest of 3 numbers?

3. (a) Differentiate while and do-while with an examples?

(b) Write a C program to perform matrix multiplication?

4. (a) Explain binary search with a suitable example?

(b) Write C program to find the roots of Quadratic equation?

5. (a) Create and display an employee structure with Ename, Eid, Age, Esal, DOJ.

(b) Write a C program on recursive Fibonacci series?

6. (a) What is pointer and what are the operations performed on pointers?

(b) Write a short notes on file handling?

7. (a) Compare call-by-value and call-by-reference methods with an example program.

(b) How does selection sort algorithm work? Explain step by step with an example.

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Code No: D-2325/N/BL/AICTE

FACULTY OF ENGINEERING
B.E. (Civil/CSE/CME/DS) I Semester (AICTE) (Backlog) (New) Examination, September/ October - 2022

Time: 3 Hours   Subject: Programming for Problem Solving   Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each Questions carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Differentiate Assembler and Compiler
   b) What is the use of break statement?
   c) Write short notes on math.h
   d) What is a recursive function?
   e) What is the advantage of linked list over arrays?
   f) Illustrate various types of errors in C language.
   g) What is the use of strlen() and strcpy() functions.

2. a) Explain components of computer system in detail.
   b) Draw Flow Chart to find roots of a quadratic equation.

3. a) Write in detail about Logical, Bitwise and Increment/Decrement operators.
   b) Write a program to to perform addition of two matrices.

4. a) Sort the following numbers using Selection sort: 55, 12, 30, 78, 91, 11, 10, 45
   b) Explain the concept of call by reference in functions.

5. a) Write a program to print factorial of a number using recursive function.
   b) What is an Array of structure? Demonstrate with an example.

6. a) What is a pointer? How it is used in self-referential structures.
   b) List and explain any six file handling functions with examples.

7. a) Explain in detail conditional control statements with example.
   b) Write short notes on keywords in C.

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FACULTY OF ENGINEERING
B.E. (Civil/ CSE/ CME/DS) I-Semester (AICTE) (Main & Backlog) (New) Examination,
February / April-2023

Subject: Programming and Problem Solving

Time: 3 Hours

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the
remaining six questions. Each questions carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same
order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. (a) What is flowchart? How is it different from algorithm?
   (b) Write down the various components in a computer system.
   (c) Mention the difference between while and do-while loops.
   (d) Why is it necessary to give the size of an array in the array declaration?
   (e) Define a pointer.
   (f) Write an algorithm for addition of two numbers.
   (g) What is the return type of the function fopen() ?

2. (a) What are the steps involved in creating, compiling and executing a C program with an
   example?
   (b) Develop a program to checks whether a given number is a Fibonacci number or not.

3. (a) Write a program that finds the sum of digits of a given number.
   (b) Define data type. Explain about various data types with examples?

4. (a) What are the different ways of passing parameters to a function? Explain
   (b) Write an algorithm for finding roots of an equation.

5. (a) Explain selection sort algorithm. Sort the following numbers in ascending order using
   selection sort. {85, -3, 27, 12, -8}.
   (b) Differentiate between if statement and if-else statement with suitable examples.

6. (a) Discuss different string handling functions available in C language.
   (b) What is an array? Explain the one-dimensional array with suitable example program.

7. (a) Define a structure. Explain how to declare, initialize and access the structure elements.
   (b) Write a C program to compute factorial of a given number using recursion.

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FACULTY OF ENGINEERING

B.E. (Civil/CSE/CME/DS) I-Semester (AICTE) (Backlog) (New) Examination, September/ October 2023

Time: 3 Hours

Subject: Programming for Problem Solving

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each questions carries 14 Marks.

(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.

(iii) Missing data, if any, may be suitably assumed.

1. a) Differentiate Logical and Syntax Errors.
   b) Give an example using continue statement.
   c) List few functions of math.h.
   d) How is recursion different from iteration?
   e) What is NULL pointer?
   f) Write a while loop to print factors a given number.
   g) Write the steps for Binary search.

2. a) Draw and explain in detail various components of the computer.
   b) Write an Algorithm to find roots of the Quadratic Equation.

3. a) Write in detail about pretested and post tested loops with example.
   b) Write a program to read and print a matrix.

4. a) Write an Algorithm/ Program for Bubble Sort. Sort the following numbers using Bubble sort: 25, 14, 65, 10, 20, 30.
   b) What is various parameter passing techniques. Explain with examples.

5. a) What is Array of Structure. Demonstrate with Student example.
   b) Write a program using recursive function to find factorial of a number.

6. a) What is Pointer. Create a self-referential structure using pointer.
   b) Write a program to append data to an existing file.

7. a) Explain any four string handling functions.
   b) Explain in detail Bitwise Operators and Conditional Operator.

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FACULTY OF ENGINEERING

B.E. (Civil/CSE/AI/CME/DS) I - Semester (AICTE) (Main & Backlog) (New) Examination, February/ March 2024

Subject: Programming for Problem Solving

Time: 3 Hours

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 Marks.
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(iii) Missing data, if any, may be suitably assumed.

1. a) Explain the role of compilers in program execution.
   b) Define arithmetic expressions in C and their precedence.
   c) Explain the concept of bubble sort with an example.
   d) Give an example of a recursive function to find factorial.
   e) Explain the concept of pointer arithmetic with an example.
   f) What is a structure in C programming?
   g) Describe the purpose of flowcharts in programming.

2. a) Elaborate on the relationship between algorithms, source code, and executable code.
   b) Define pseudocode and its importance in programming.

3. a) Discuss the evaluation of conditional statements in C.
   b) Discuss the implementation and applications of multi-dimensional arrays in C.

4. a) Elaborate on the use of functions for modular programming in C.
   b) Explain the implementation of recursive functions in C.

5. a) Analyze the benefits and drawbacks of using recursion in programming.
   b) Discuss the use of structures in data organization and management.

6. a) Explain the use of pointers in arrays.
   b) Describe the basic idea of linked lists in C.

7. a) Explain the significance of parameter passing techniques in function calls.
   b) Explain the process of reading and writing files in C.

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FACULTY OF ENGINEERING
B.E. (Civil/CSE/AI/CME/DS) I - Semester (AICTE) (Backlog) (New) Examination,
August / September 2024

Subject: Programming for Problem Solving

Time: 3 Hours

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the
remaining six questions. Each question carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same
order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Define a Flow chart with an example.

    b) Differentiate between Hardware and Software components of a Computer

    c) List the different relational Operators

    d) Compare between 'While' and 'Do While'.

    e) Give the declaration of a 2-D Array.

    f) What is a Pointer?

    g) Define a Structure with example.

2. a) Discuss the different datatypes available in C with examples.

    b) Explain the Structure of a C Program in detail.

3. a) Briefly explain the various Control Statements in detail with examples.

    b) Write a c program to demonstrate the usage of Switch () Statement.

4. a) What are the different types of Functions? Explain in detail with example.

    b) Write a c program to demonstrate the bubble sort technique.

5. a) Write a c program to demonstrate the Fibonacci series using Recursion.

    b) Explain the various String Functions in detail.

6. a) Write a C program to Copy one String to another without using String function.

    b) What are different Storage classes in C?

7. a) Explain Structure in detail with an example program.

    b) What are Files? What are Different File Functions?

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