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NARSIMHA REDDY ENGINEERING COLLEGE
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UGC AUTONOMOUS

B.Tech I Year Syllabus (w.e.f AY 2023-2024)

PROGRAMMING FOR PROBLEM SOLVING

Unit wise Question Bank

UNIT 1

S.No		Questions	BT	CO	PO
Part – A (Short Answer Questions)					
1		Define Algorithm and list the characteristics of an algorithm.	BT2	CO1	PO1
2		Define flowchart. Give the Symbols in a Flowchart?	BT1	CO1	PO1
3		What is an identifier? Write the rules to declare an identifier?	BT2	CO1	PO1
4		What are c tokens?list the tokens in c.	BT2	CO1	PO1
5		What is a data type? list the various data types available in c.	BT3	CO1	PO2
6		What is an operator? List the types of operators in c.	BT3	CO1	PO2
7		Write the syntax of scanf( ) and printf( ) statements.	BT2	CO1	PO2
8		Write the syntax of 'for' Loop with example.	BT2	CO1	PO1
9		Distinguish between while and do-while loop.	BT2	CO1	PO2
10		Write short notes on jump statements?	BT3	CO1	PO1
Part – B (Long Answer Questions)					
11	a)	What is the structure of a `C' program and explain with example?	BT3	CO1	PO2
	b)	Write an algorithm and flowchart to find the largest among three numbers.	BT2	CO1	PO2

12	a)	Explain in detail about conditional Statements in C.	BT4	CO1	PO2
	b)	Write a 'C' program to find the reverse of a given number using while loop.	BT3	CO1	PO3
13	a)	Explain the different types of operators are used in C.	BT3	CO1	PO2
	b)	Explain the switch statement with Example program.	BT2	CO1	PO2
14	a)	Write in detail about different types of loop statements in C.	BT3	CO1	PO2
	b)	Write a C program to find factorial of a given number 'N' by using for loop.	BT3	CO1	PO3
15	a)	Explain unconditional statements in c with example programs.	BT2	CO1	PO2
	b)	Write a c program to print Fibonacci sequence.	BT3	CO1	PO2
16	a)	Write a program to check whether the given number is palindrome or not.	BT2	CO1	PO2
	b)	Write a program to check whether the given number is amstrong or not.	BT2	CO1	PO2

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UNIT 2

S.No		Questions	BT	CO	PO
Part – A (Short Answer Questions)					
1		What is an array? Give example to Declare one and two dimensional arrays.	BT2	CO1	PO1
2		Define Union with an example.	BT1	CO1	PO1
3		What is a string? How to declare and initialize a string?	BT2	CO1	PO1
4		Define structure with example.	BT2	CO1	PO1
5		Mention the advantages and disadvantages of an array..	BT3	CO1	PO2
6		Discuss about strlen() function with an example.	BT3	CO1	PO2
7		List the input/output functions for strings	BT2	CO1	PO2
8		What is a pointer? Explain how the pointer variable is declared and initialized?	BT2	CO1	PO1
9		Write Short notes on enumeration data type	BT2	CO1	PO2
10		Distinguish between 1DA and 2DA.	BT3	CO1	PO1
Part – B (Long Answer Questions)					
11	a)	Define two-dimensional arrays? How to declare two-dimensional arrays?	BT3	CO1	PO2
	b)	Write a c program to print transpose of a matrix of order 3*3.	BT2	CO1	PO2
12	a)	Explain about the following string handling functions with example programs. (i)strlen() (ii) strcpy() (iii) strcmp() (iv) strcat()	BT4	CO1	PO2
13	a)	How can we declare and initialize Array of strings in C? Write a program to read and displayarray of strings.	BT3	CO1	PO2
	b)	Differentiate structures and unions.	BT2	CO1	PO2

14	a)	Define Structure and explain the declaration and initialization of structures with an example.	BT3	CO1	PO2
	b)	Define a 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.	BT3	CO1	PO3
15	a)	What is an array of structure? Declare a variable as array of structure and initialize it?	BT2	CO1	PO2
	b)	Write a C program using array of structure to create employee records with the following fields : emp-id, name, designation, address, salary and display it.	BT3	CO1	PO2
16	a)	What is an array of pointer? How it can be declared? Explain in detail how to access a one dimensional array using pointers with an example program?	BT2	CO1	PO2
	b)	Explain in brief about pointers to structures .Write a c program to demonstrate pointer to structures	BT2	CO1	PO2

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S.No		Questions	BT	CO	PO
Part – A (Short Answer Questions)					
1		Define preprocessor directives. List few preprocessor commands .	BT2	CO1	PO1
2		What is a macro? what are the uses of a macro?	BT1	CO1	PO1
3		What is a file? Write the syntax for opening a file.	BT2	CO1	PO1
4		Distinguish between text and binary files	BT2	CO1	PO1
5		List the advantages of using files	BT3	CO1	PO2
6		List some predefined macros with example program.	BT3	CO1	PO2
7		What is the usage of fgetc() and fputc() functions.	BT2	CO1	PO2
8		List the positioning functions in files.	BT2	CO1	PO1
9		What is the use of ftell() and rewind() functions?	BT2	CO1	PO2
10		Define different file modes of operation?	BT3	CO1	PO1
Part – B (Long Answer Questions)					
11	a)	Briefly explain the pre-processor directives in detail.	BT3	CO1	PO2
	b)	Write a C program that uses the macro and prints area and circumference of a circle.	BT2	CO1	PO2
12	a)	Define file and explain about the types of files and how to open and close a file.	BT4	CO1	PO2
	b)	Write a c program to read and display the contents of a file?	BT3	CO1	PO3
13	a)	Explain different modes of opening files with syntax and example?	BT3	CO1	PO2
	b)	Write a c program to copy the contents of one file to another?	BT2	CO1	PO2
14	a)	Explain various file handling operations in c.	BT3	CO1	PO2
	b)	Write a c program to append text to an existing file using file	BT3	CO1	PO3

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		handling ?			
15	a)	Explain about random access functions to files with example?	BT2	CO1	PO2
	b)	write a c program using fseek() function.	BT3	CO1	PO2

UNIT 4

S.No		Questions	BT	CO	PO
Part – A (Short Answer Questions)					
1		What is a Function? What are the types of functions in c?	BT2	CO1	PO1
2		List the advantages of function.	BT1	CO1	PO1
3		Distinguish between Library functions and User defined functions in C	BT2	CO1	PO1
4		Write about standard functions with examples?	BT2	CO1	PO1
5		Differentiate actual parameters and formal parameters.	BT3	CO1	PO2
6		What is recursive function? Write syntax for recursive functions.	BT3	CO1	PO2
7		What are the limitations of Recursion?	BT2	CO1	PO2
8		What is dynamic memory allocation in c? list the dynamic memory management functions in c.	BT2	CO1	PO1
9		Write the syntax and purpose of malloc() function.	BT2	CO1	PO2
10		How to freeing the memory? Give syntax of realloc () function	BT3	CO1	PO1
Part – B (Long Answer Questions)					
11	a)	Explain with a program function with no arguments but with a return value.	BT3	CO1	PO2
	b)	Write a C program for swapping of two numbers using call by value mechanism	BT2	CO1	PO2
12	a)	Explain the Parameter Passing Mechanisms in C-Language with examples.	BT4	CO1	PO2

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	b)	Write a C program for swapping of two numbers using call by reference mechanism	BT3	CO1	PO3
13	a)	Explain the various categories of user defined functions in C with examples?	BT3	CO1	PO2
	b)	Write a program to find factorial of a number using recursion. Write a program to generate Fibonacci series using recursive functions.	BT2	CO1	PO2
14	a)	How can we pass the Array to Functions? Explain with example program.	BT3	CO1	PO2
	b)	Write a program to calculate GCD of two numbers using recursion	BT3	CO1	PO3
15	a)	How to pass structure to a function? Illustrate with example?	BT2	CO1	PO2
	b)	How to use pointers as arguments in a function explain with a program	BT3	CO1	PO2
16	a)	Explain about malloc( ) and calloc( ) dynamic memory management functions with an example.	BT2	CO1	PO2
	b)	Explain about free( ) and realloc( ) allocation functions with an example?	BT2	CO1	PO2

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UNIT 5

S.No		Questions	BT	CO	PO
Part – A (Short Answer Questions)					
1		What is an algorithm ?write the properties of an algorithm with an example.	BT2	CO1	PO1
2		Differences between linear search and binary search.	BT1	CO1	PO1
3		What do you mean by sorting ? Mention the types of sorting.	BT2	CO1	PO1
4		Explain Linear search method	BT2	CO1	PO1
5		What is meant by Time and Space Complexities?	BT3	CO1	PO2
6		Write a short note on binary search.	BT3	CO1	PO2
7		List various Sorting techniques	BT2	CO1	PO2
8		Mention the complexity of Linear and binary search algorithms	BT2	CO1	PO1
9		What is meant by searching? Mention the types of searching techniques.	BT2	CO1	PO2
10		Mention the time complexity of bubble and selection sort algorithms	BT3	CO1	PO1
Part – B (Long Answer Questions)					
11	a)	Write an algorithm to find the roots of quadratic equation.	BT3	CO1	PO2
	b)	Write a c program to return minimum and maximum element in an array using linear search.	BT2	CO1	PO2
12	a)	Explain linear search with an example.	BT4	CO1	PO2
	b)	Apply Linear search on the data {22,11,66,44,99,55,88} to find 99	BT3	CO1	PO3
13	a)	Explain binary search with an example.	BT3	CO1	PO2
	b)	Trace the steps to search 23 in the following elements 12, 15, 18, 20, 22, 36, 39, 40, 46 which is unsuccessful search using binary search	BT2	CO1	PO2

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14	a)	Write a C program to search the element in a given List by using the binary search.	BT3	CO1	PO2
	b)	Write a C program to sort the elements by using bubble sort.	BT3	CO1	PO3
15	a)	Write a c program to find whether a given number is prime number or not?	BT2	CO1	PO2
	b)	Explain selection sort technique with a simple program.	BT3	CO1	PO2
16	a)	Differentiate the bubble sort, insertion sort and selection sort techniques	BT2	CO1	PO2
	b)	Write a C program to demonstrate how insertion sort works	BT2	CO1	PO2

* **Blooms Taxonomy Level (BT)** (L1 – Remembering; L2 – Understanding; L3 – Applying;L4 – Analyzing; L5 – Evaluating; L6 – Creating)

Course Outcomes (CO)

Program Outcomes (PO)

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