



ACE
Engineering College
(with a Difference in Excellence)



An **AUTONOMOUS** Institution

Question Paper Code:

CS103ES

ACE-R20

Semester End Examination
I B. Tech- I Semester- JULY- 2021
Programming for Problem Solving
(Common to CIVIL, MECH, ECE, CSM, and CSO)

Time: 3 Hours

Max. Marks: 70

H. T. No									
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Answer any five full questions from the following. All Questions carry equal marks.
M=Marks; CO=Course Outcomes; PO= Program Outcomes

Q.No	Question	M	CO	PO
1. a)	Draw the block diagram of a computer and explain the functions of each component.	8	1	1
b)	What is flowchart? Draw a flowchart to find the maximum of 3 numbers.	6	1	1,3
2.a)	What is a storage class specifier? Briefly explain about the C storage class specifiers with suitable examples.	10	2	1
b)	What is an Identifier? List the rules to form an identifier.	4	2	1
3. a)	Explain different looping constructs in C with suitable example.	10	3	2,12
b)	When do you call a structure as a self-referential structure? What is the use of self-referential structure?	4	3	2,12
4. a)	Explain String handling functions with suitable examples.	7	3	3
b)	Design a structure Book with the fields: Name, Author and Price. Develop a C program to read and display the details of 'n' books using the above structure.	7	5	2,12
5. a)	Explain the types of preprocessor commands.	7	4	12
b)	Write a program to copy the contents of one file to another.	7	4	3,5
6. a)	Discuss about the call-by-value and call-by-reference parameter passing mechanisms supported in C.	8	5	5,11
b)	What is recursion? Write a recursive function to find the factorial of a given number.	6	5	5,14
7.	Apply merge sort on the following elements. Explain the sorting process in detail. 23,56,12,1,30,15	14	6	2,3,5,14
8. a)	Discuss about the implementation of stack using array.	7	6	2,3,5
b)	How does binary search work? Write a program to implement binary search algorithm.	7	6	2,3,5