

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

May-June 2024

Program: Btech Scheme: III / II

Regular Examination: FY Semester: II

Course Code: BSC205 and Course Name: Computer Programming

Date of Exam: 22/05/2024

Duration: 02.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Mention the different types of Tokens in "C", and explain one of them.		CO1	U
ii)	Write a C program to determine whether a given number is negative, positive or zero, using if-else statement.		CO2	Ap
iii)	Why do we prefer iteration over recursion in any C program?		CO3	U
iv)	What are the advantages and Disadvantages of Array?		CO4	U
v)	Differentiate between Structure and Union.		CO5	An
vi)	Identify the types of pointers from the below two programs: <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>1. <code>#include <stdio.h></code> <code>int main(){</code> <code>int *ptr = NULL;</code> <code>printf("%d", *ptr);</code> <code>return 0;}</code></p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>2. <code>#include <stdio.h></code> <code>int main(){</code> <code>int *p;</code> <code>*p=10;</code> <code>printf("%d", *p);</code> <code>return 0;}</code></p> </div> </div>		CO6	An
vii)	What are the C file operations, provide six different possible file operation function?		CO6	
viii)	<div style="display: flex;"> <div style="border: 1px solid black; padding: 5px; width: 35%;"> <pre>#include <stdio.h> int main(){ int c = 5, no = 10; do { no /= c; } while(c--); printf ("%d\\n\\n", no); return 0;}</pre> </div> <div style="width: 60%;"> <p>Derive the output of the below code snippet . Give proper explanation to your answer.</p> </div> </div>			
	Solve any four questions out of six.	16		

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Q.2			
i)	Define an algorithm. What is the need of algorithm and mention properties of algorithms.	CO1	U
ii)	Write a program in C to display n numbers of natural numbers and their sum.	CO2	An
iii)	Explain all the storage classes in C with any one example	CO3	U
iv)	Discover 4 differentiation between String and Character.	CO4	An
v)	Provide an example demonstrating the declaration and initialization of a structure named "Point", Also display the coordinates. Hint : P(x,y) In mathematics a point is having two coordinates i.e. x and y.	CO5	AP
vi)	Differentiate between Static memory allocation and Dynamic memory allocation.	CO6	U
Q.3	Solve any two questions out of three.	16	
i)	Develop a flowchart to display whether the given year is a leap year or not?	CO1	Ap
ii)	What is array? Explain the various ways to initialize array using example.	CO4	U,Ap
iii)	Explain the concept of nested structure with following example: Create structure product {cost, id, type} and structure delivery { del_date, del_number, del_type).		An,Cr
Q.4	Solve any two questions out of three.	16	
i)	Implement a C program to read weekday number and print weekday name using switch case.	CO2	An
ii)	Write a program for Sorting the array of numbers [10,07,08,09,01,05], using the Quick Sort Method. Also mention the Time complexity of it.	CO3	Ap
iii)	Why do we need File handling in "C", also explain the two distinct types data files in "C" language and explain what is "r+" and "rb+" opening mode in "C".	CO6	U
