UPES
UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2021

Course: Programming and Data Structure
Program: BCA
Course Code: CSBC1008

Semester: I
Time : 03 hrs.
Max. Marks: 100

SECTION- A (Scan and upload) (5 x 4M= 20M)

S. No.		Marks	CO
Q. 1	Explain the use of different logical operators with the help of a suitable example.	4	CO1
Q. 2	Differentiate entry control loop and exit control loop with the help of an example.	4	CO1
Q. 3	Describe the use of structure data type with the help of an example.	4	CO3
Q. 4	Illustrate the use of array of structure with suitable example.	4	CO3
Q. 5	Which searching algorithm is applicable for following array and support your answer with explanation. <table><tr><td>45</td><td>68</td><td>632</td><td>5234</td><td>9876</td></tr></table>	4	CO5

SECTION- B (Scan and upload) (4 x 10M= 40M)

Q. 6	Illustrate the importance of flowchart in software development. A student appear in an examination, which consists of total 10 subjects, each subject having maximum marks of 100. The roll number of the student, his/her name, and the marks obtained by him/her in various subjects are supplied as input data. Draw a flowchart to calculate the percentage marks obtained by the student in his examination and then print it along with his/her roll number and name.	10	CO1
Q. 7	Illustrate the use of function. Write a C program using function to find out $(x)^n$ where x and n entered through user.	10	CO2
Q. 8	Compare structure and union data type with the help of an example.	10	CO3
Q. 9	i. Explain two applications of sorting and sort the following numbers in ascending order using Bubble sort. Given Numbers: 101, 214, 104, 538, 417 and write the output after each iteration. (OR) ii. Illustrate the use of file in C programming and explain different modes of file operations.	10	CO5

SECTION-C

Q. 10	i. Explain the use of stack and write a C program to implement a stack. ii. Differentiate between binary search and linear Search with example. (OR)	10 10	CO4

	iii. Create a Singly Linked List using data fields 10, 20, 30, 40, 50 and show procedure step-by-step with the help of diagram from start to end. iv. Explain the use of queue and write a C program to implement a queue.	**10** **10**	
Q.11	i. Explain the use of an array in C programming. Write a C program for addition of two dimension matrices, where user has to enter order of matrices. If order of matrices is not suitable for matrix addition then appropriate message should be generated for user. ii. Explain the use of following inbuilt functions with the help of an example: strcmp (), strcpy(), strupr(), strcat() iii. Write a C program for converting an upper case string entered through user into lowercase string without using inbuilt function.	**10** **4** **6**	**CO2**