

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Programme Name: B.Sc Chemistry (hons)	Semester : III
Course Name : Basics of programming	Time : 03 hrs.
Course Code : MATH2026	Max. Marks : 100
Nos. of page(s) : 3	

Instructions: All questions are compulsory.

SECTION A

S. No.		Marks	CO
Q 1	Write a program in C to find the factorial of a natural number.	04	CO3
Q 2	Write a program to compute the sum of the first n terms of the following series $S = 1 + 1/2 + 1/3 + 1/4 + \dots$	04	CO3
Q 3	When is a 'switch' statement better than multiple 'if' statements?	04	CO2
Q 4	Write the output of the following program. <pre>#include <stdio.h> #include <string.h> main() { char Kid[12]; char Hero[] = "Batman"; Kid[0] = 'K'; Kid[1] = 'a'; Kid[2] = 't'; Kid[3] = 'i'; Kid[4] = 'e'; Kid[5] = '\0'; printf("%s favorite hero is %s.\n", Kid, Hero); return 0; }</pre>	04	CO3
Q 5	What is a constant pointer?	04	CO1

SECTION B

Q 6	Design and develop a C program to print reverse of an integer number.	10	CO3
Q 7	Write a C program to swap two numbers using call by pointers method.	10	CO1
Q 8	Write a C program to count the number of occurrences of vowels and consonants in sentence.	10	CO3
Q 9	Write a C program to find average of n numbers.	10	CO3

SECTION-C

Q 10 A	<p>Write the output of the following program.</p> <pre>#include <stdio.h> int main () { /* local variable definition */ int a = 10; /* do loop execution */ do { printf("value of a: %d\n", a); a = a + 1; }while(a < 20); return 0; }</pre>	10	CO2
Q 10 B	<p>Explain the output of the following program.</p> <pre>#include <stdio.h> void Array_sort(int *array , int n) { int i=0 , j=0 , temp=0; for(i=0 ; i<n ; i++) { for(j=0 ; j<n-1 ; j++) { if(array[j]>array[j+1]) { temp = array[j]; array[j] = array[j+1]; array[j+1] = temp; } } } printf("\nThe array after sorting is..\n"); for(i=0 ; i<n ; i++) { printf("\narray_1[%d] : %d",i,array[i]); } }</pre>	10	CO3

	<pre> float Find_median(int array[] , int n) { float median=0; if(n%2 == 0) median = (array[(n-1)/2] + array[n/2])/2.0; else median = array[n/2]; return median; } int main() { int array_1[30] = {0}; int i=0 ,n=0; float median=0; printf("\nEnter the number of elements for the array : "); scanf("%d",&n); printf("\nEnter the elements for array_1..\n"); for(i=0 ; i<n ; i++) { printf("array_1[%d] : ",i); scanf("%d",&array_1[i]); } Array_sort(array_1 , n); median = Find_median(array_1 , n); printf("\n\nThe median is : %f\n",median); return 0; } </pre>		
Q 11	<p>Explain any five string manipulation library functions with examples.</p> <p style="text-align: center;">OR</p> <p>Write a C Program to Implement a Queue using an Array.</p>	20	CO4