Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Programming for problem solving (CSEG 1003) **Semester: 1st**
Programme: B.Tech (Chemical, GAS, ME, UP) **Code: CSEG-1003**
Time: 03 hrs. **Max. Marks: 100**
Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Describe an algorithm and flowchart definition. Write the characteristics of good algorithm and advantage of flowchart.	**4**	**CO1**
Q 2	Find the following conversion in the number system. (full explanation) a. $(11101)_2$ ----------(_____)$_{10}$ b. $(B2D)_{16}$ ----------(_____)$_{10}$ c. $(126)_8$ ----------(_____)$_{10}$	**4**	**CO1**

Q 3	Find the output of following program with full explanation. (ignore the syntax error)
	A.
	main() {
	int k =35, z;
	k = func1(k = func1 (k = func1 (k)));
	printf("k = %d", k);
	}
	func1 (k)
	int k; {
	k++;
	return (k);
	}
	B.
	main()
	{
	int x;
	x = 3+4-7*8/5%10;
	printf("x = %d", x);
	}
		(3+1)	**CO3**

Q 4	Describe the following terms: A. Range of integer. B. Data type C. Kewords in C. D. Syntax of 2 D array.	**4**	**CO2**
Q 5	Write a note on the following and mention an example for each to support your answer:- 1) Break statement 2) Continue Statement	**4**	**CO2**

	SECTION B		
Q 6	i. What is the difference between call by value and call by reference? Give example to support your answer. ii. Write a C program, to enter a string through user and find reverse of entered string without using the function.	**(5+5)**	**CO4**
Q 7	**i.** What is the difference between structure and union? Explain with the help of program. **ii.** Write a program in C to pass integer value to a function and return its factorial.	**(6+4)**	**CO5**
Q 8	**i.** Write a C program to find the eligibility of admission for a professional course based on the following criteria: Marks in Maths >=60 Marks in Physics >=50 Marks in Chemistry>=40 Total in all three subject >=200 or Total in Math and Physics >=150 Given the marks in the three subjects, write a program to process the application to list the eligible candidate. **ii.** What is recursion in C? Explain with application and example.	**(7+3)**	**CO4**

Q 9	Write a C program for swapping two numbers using:
	A. Three variable B. Two Variable. C. Using Function
	
	OR
	
	Find the output of the following program.
	
	#include<stdio.h>
	int f(int *a, int n)
	{
	if(n <= 0) return 0;
	else if(*a % 2 == 0) return *a + f(a+1, n-1);
	else return *a - f(a+1, n-1);
	}
	int main()
	{
	int a[] = {12, 7, 13, 4, 11, 6};
	printf("%d", f(a, 6));
	getchar();
	return 0;
	
	char inchar = 'A';
	switch (inchar)
	{
	case 'A' :
	printf ("choice A n") ;
	case 'B' :
	printf ("choice B ") ;
	case 'C' :
	case 'D' :
	case 'E' :
	default :
	printf ("No Choice") ;
	}
		(3+4+3)
		or
		(7+3)
			CO3

	}			
SECTION-C				
Q 10	Write a C program of the following problem. i. Find the Fibonacci series (without using function and input is given by user). ii. Find the prime number. (input is given by user)		**(10+10)**	**CO5**
Q 11	i. Write a C program to find out the largest and smallest number in an entered array without using sorting of number input is given by user. ii. Write a C program printing the elements of a structure using pointers. OR Write the definition, application of arrays and C program to perform following operation. **A.** Multiplication in 2 D Array, **B.** Addition in 2 D Array, **C.** subtraction on 2-D array (entered through user as per user choice)		**(14 + 6) or (5 +15)**	**CO5**

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Name of the School (Please tick, symbol is given)	:	**SOE**	☐	**SOCS**		**SOP**	
Programme	:	**B.Tech Non CIT (Chemical, GAS, ME, UP)**					
Semester	:	**1st**					
Name of the Course	:	**Programming for problem solving**					
Course Code	:	**CSEG 1003**					
Name of Question Paper Setter	:	**Rahul Kumar Singh**					
Employee Code	:	**40001803**					
Mobile & Extension	:	**9781016195**					
Note: Please mention additional Stationery to be provided, during examination such as Table/Graph Sheet etc. else mention "NOT APPLICABLE": **No Table, Graph or calculating devices are required to answer this paper.**							

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Note: - Pl. start your question paper from next page

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Name: **Enrolment No:**	UPES

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Time: 03 hrs. **Max. Marks: 100**
Instructions:

SECTION A

S. No.		Marks	CO
Q 1	What is programming language? Describe the various generation of programming language.	**4**	**CO1**
Q 2	Write an algorithm and flow chart to find the biggest of three number. (Full proper explanation)	**4**	**CO2**

Q 3	Find the output of following program:
	A.
	`main()`
	`{`
	`int a=100, *b, **c, ***d;`
	`b= &a, c= &b, d= &c;`
	`printf("%d %d %d %d", a, *b, **c, ***d);`
	`}`
	B.
	`main()`
	`{`
	`int z =4;`
	`printf("%d", printf("%d %d", z, z));`
	`}`
		(2+2)	**CO3**

Q 4	Describe the following terms: B. Range of float. B. function in C C. String in C. D. Syntax of Union.	**4**	**CO2**
Q 5	Write a note on the following and mention an example for each to support your answer:- 3) Switch Case 4) For loop	**4**	**CO4**

SECTION B

Q 6	i. What is a structure? Explain the syntax of structure declaration with example. Differentiate between array and structure. ii. Write a C program, to enter a string through user and find whether the entered string is palindrome or not. (Without using the function)	**5+5**	**CO5**
Q 7	What is Array in C programming? Explain the types, syntax, initialization, and declaration structure of Array with the help of program.	**10**	**CO4**

<table>
<tr><td>Q 8</td><td>Find the output of the following program: (Full explanation ignore the syntax error)
A.
#include <stdio.h>
int fun(int n, int *f_p)
{ int t, f;
if (n <= 1)
{ *f_p = 1;
return 1;
}
t = fun(n- 1,f_p);
f = t+ * f_p;
*f_p = t;
return f;
}
int main()
{
int x = 15;
printf (" %d \n", fun(5, &x));
return 0;
}
B.
#include <stdio.h>
void f(int *p, int *q)
{
p = q;
*p = 2;
}
int i = 0, j = 1;
int main()
{
f(&i, &j);
printf("%d %d n", i, j);
getchar();
return 0;
}</td><td>(6+4)</td><td>CO3</td></tr>
<tr><td>Q 9</td><td>i. Write a C program to find the factorial of a numbers using (Input is given by user):
A. while loop B. for loop. C. Using Function
OR
ii. Write a C Program to add first 7 terms of following series
1/1! + 2/2! + 3/3! + 4/4! +……..</td><td>(3+4+3) or 10</td><td>CO3</td></tr>
<tr><td colspan="4">SECTION-C</td></tr>
<tr><td>Q 10</td><td>Write a C program of the following problem.
i. Write a C program, in which strings is entered by the user and change the case of given entered string.
ii. Find whether given no is prime or not. (input is given by user)</td><td>(10+10)</td><td>CO5</td></tr>
<tr><td>Q 11</td><td>i. Write a C program to implement addition, subtraction, multiplication, and division using switch case in one program.
ii. Write a C program that accept 7 numbers in array, sort them in ascending and descending order and display that array.
OR
i. Write a C program to pass an array in function and print the element of an array in function definition.
ii. Write a C program to print the following pattern.
1
21
321
4321
54321</td><td>10+10 or (10+10)</td><td>CO5</td></tr>
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