Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

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

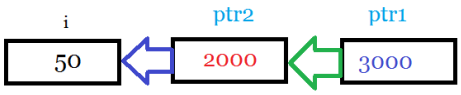
Course: Programming for Problem Solving **Semester: I**
Program: BT-APE-Spz-GS, BT-APE-Spz-US,BT-CHE-Spz-R&P,BT-ME **Time 03 hrs.**
Course Code: CSEG 1003 **Max. Marks: 100**
Instructions:Answer all questions.

SECTION A

S. No.		Marks	CO
Q 1	What is an Array? List its types with an example. State how arrays is declared and initialized with an example.	**4**	**CO3**
Q 2	Define Recursive Function? Give an example to demonstrate the working of recursive function.	**4**	**CO4**
Q 3	Differentiate Structures and Unions.	**4**	**CO3**
Q 4	Give the Structure of C program with its compilation steps?	**4**	**CO2**
Q 5	Design a structure 'product' to store the details of the product like product name, price per unit. Get the name, price per unit. Display all the details of the procured product.	**4**	**CO5**

SECTION B

Q 6	Explain the only ternary operator in C language. Discuss the use of them by an example program to find the biggest of three numbers.	**10**	**CO2**
Q 7	Develop a menu driven program to perform an operation addition, subtraction on 2-D matrices entered through user as per user choice.	**10**	**CO3**
Q 8	Illustrate the advantage and purpose of passing arguments by reference over passing by value. **OR** Create a function to "void check()" which check the given input is odd/even. Call the function from main. Show function prototype, function call and function definition in your code.	**10**	**CO4**
Q 9	Define Pointer? How pointers are declared and initialized? Develop a C program to display the value of i using double pointer.	**10**	**CO4**

			
	SECTION-C		
Q 10	a) Perform the following Number Conversions. (12 marks) i. $(11001.111)_2 = (\_?\_)_{10} = (\_?\_)_8 = (\_?\_)_{16}$ ii. $(935)_{10} = (\_?\_)_2 = (\_?\_)_8 = (\_?\_)_{16}$ b) What is Flowchart? Specify any 6 symbols of flowchart with its purpose and guideline to be followed while using them. (8 Marks)	**20**	**CO1**
Q 11	a) Design the given problem using Algorithm and Flowchart and convert the solved design into the software using C language. A book and stationary store decide to give its customers 10% discount on a purchase greater than 10,000/. The program should accept the quantity purchased the price of the items and then calculate the amount payable. Further based on the total amount, appropriate discount should be given, and final payable amount should be displayed. (15 Marks) b) Discuss the need of file handling in C language. Write a C program to get store the employee details like employee name, age, Address, salary in a file. (5 Marks) **OR** a) Design the given problem using Algorithm and Flowchart and convert the solved design into the software using C language. A software to compute grade of students immediately when the marks are entered. The grades are assigned as if marks<50 grade F, if 50-69 grade B, between 70-89 grade A, 90 and above grade O. (15 Marks) b) Discuss the four storage classes of C language. (5 Marks)	**20**	**CO5**