

--	--	--	--	--	--	--	--	--	--

MCA DEGREE I SEMESTER EXAMINATION NOVEMBER 2014

CAS 2102 PROGRAMMING IN C (2014 Revision - Regular)

Time: 3 Hours

Maximum Marks: 50

PART A (Answer **ALL** questions)

(15 × 2 = 30)

- I. (a) How structured programming is done?
(b) Write an algorithm and flowchart for finding first and second highest of n numbers.
(c) What is meant by associativity? What is the associativity of arithmetic operators?
- II. (a) How unrecognized characters within the control string of a `scanf()` function are interpreted?
(b) Write the syntactic rule associated with the 'for' statement?
(c) Write a loop that will examine each character in a character type array and determine how many characters are vowels and how many are consonants?
- III. (a) What is the out put of the following program?

```

Int func (int x)
{ if (x<=0
    return (1);
  return func (x - 1) + x;
}
Main()
{
  printf("%d\n", func(5));
}

```


(b) Write a function that calculate and display the real roots of the quadratic equation $ax^2 + bx + c = 0$
(c) What is the difference between passing by value and passing by reference? To what types of arguments does each apply?
- IV. (a) Define a pointer? What are the operations on pointers?
(b) How the indirection operator can be used to access a multidimensional array element?
(c) Write a program to read a line of text, store it and display it backwards.
- V. (a) Define a structure member? What is the relationship between a structure member and a structure?
(b) What is meant by opening a data file? How is this accomplished?
(c) What is Union? How does structure differ from Union?

PART B

(5 × 4 = 20)

- VI. Explain the various steps adopted to develop a program with flowchart, algorithm and pseudo code.

OR

- VII. What are constants? Explain the four basic types of constants with suitable examples?

(P.T.O.)

VIII. How the width attribute affect the input reading using scanf()? How the maximum field width can be specified within a scanf() function?

OR

IX. Write a program to determine the first n Fibonacci numbers and prime numbers?

X. Write a function program that allow a floating point number to be raised to an integer power, $y = x^n$.

OR

XI. Differentiate between data type and storage class. Explain different storage class specification with suitable examples.

XII. Write a program to sort a list of strings into alphabetical order using an array of pointers.

OR

XIII. What is a function pointer? Write a recursive function using function pointer to find the sum of first n natural numbers?

XIV. Explain with a suitable example how structures are passed to functions.

OR

XV. Write a program to read a list of words from a file, sort the words in alphabetical order and display them one word per line. Also give the total number of words in the list.
