Roll No. _____

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B. Tech. II Sem. (Back) Exam., May - 2019
206 Fundamentals of Computer Programming

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____ 2. NIL _____

UNIT- I

Q.1 (a) What are the various operators in C? Discuss each of them with suitable illustration. [10]

(b) Explain the terms variables and constants? How much type of variables and constants are supported in C? [6]

OR

Q.1 (a) Explain various storage classes in C with the help of example. [10]

(b) Write a short note on type casting. [6]

UNIT- II

Q.2 (a) Explain the importance of switch case statement. In which situation is a switch case desirable? Explain the usefulness default statement in switch case statement with the help of program. [8]

(b) What is array? Why are they needed? Write a C program to enter n elements in an array and find second smallest number from an array. [8]

OR

Q.2 (a) What are the similarities and differences between while and do – while loop also give the example of both? [8]

(b) What is structure? Define a structure called book with book name, author name and price. Write a C program to read the details of book name, author name and price of 200 books in a library and display the total cost of the books and the book details whose price is above ₹ 500. [8]

UNIT- III

Q.3 (a) What is an array of pointers? How is it different from pointer to an array? Can we assign a pointer variable to another pointer variable? Justify your answer with the help of an example. [8]

(b) How do you create an array using dynamic memory allocation? Give example and also list benefits of this scheme. [8]

OR

Q.3 What is a file? Why do we need to store the data in files? Write short note on the following functions. For each function, give a program code that demonstrate its usage. [4×4=16]

(a) fopen ( )
(b) fclose ( )
(c) fgetc ( )
(d) fputc ( )

Q.4 (a) Define function, why are they needed? Differentiate between call by value and call by reference with the help of an example. [8]

(b) What is recursive function? Write a C program using recursive function to print n terms of Fibonacci series. [8]

OR

Q.4 Write a short note on – [8×2=16]

(a) Array of structure

(b) Void Pointer

UNIT- V

Q.5 Convert the following numbers from one system to another – [4×4=16]

(a) $(123.63)_{10} = (?)_2$

(b) $(111.000L)_2 = (?)_{16}$

(c) $(AB20\ C.00C)_{16} = (?)_{10}$

(d) $(1010.267)_8 = (?)_2$

OR

Q.5 (a) What is pseudo code? How does it differ from flowchart? Draw and explain various symbols of flowchart and also draw the flowchart for finding a greatest among three numbers. [8]

(b) Write a short note on – [4×2=8]

(i) Difference between Primary and Secondary Memory.

(ii) Basic organization of a computer with the help of block diagram.