



End Term (Even) Semester Examination May-June 2025

Roll no. 2492113

Name of the Program and semester: BCA/BCA(AI/DS)/BCA (Cyber Security) II Sem. / BSIT 2.

Name of the Course: Programming for Problem solving

Course Code: TBC 205/TBD 205/TBL 205/TBI 204

Time: 3 hour

Maximum Marks: 100

Note:

- (i) All the questions are compulsory.
- (ii) Answer any two sub questions from a, b and c in each main question.
- (iii) Total marks for each question is 20 (twenty).
- (iv) Each sub-question carries 10 marks.

Q1. (2X10=20 Marks)

A. Differentiate between the following:

- (i) Call by value and call by reference (ii) Actual parameter and formal parameter

B. Explain the following:

- i) typedef ii) Self-referential structure iii) union

C. Let an array of integer type, takes 4 bytes of storage space for each element, A [-2 ---- 10, 5 ----- 10], calculate the address of A [3][3] if array is column row major implemented, the base address is 200.

Q2. (2X10=20 Marks)

A. Explain malloc(), calloc(), realloc and free() functions with examples.

B. Write a C program to count total numbers of space in a string.

C. Write a C program to display the content of a file using.

Q3. (2X10=20 Marks)

A. Explain the following

- i) Memory leak ii) Dangling pointer iii) Void, Null and Wild pointers

B. Write C a program to copy the content of a Text file into another text file which means it will behave like COPY command of MSDOS. Suppose the name of your program file: FILECOPY.C and FILECOPY.EXE and the name of the source file is MYFILE.TXT. and target file is TARGATFILE.TXT. The following command should work: C: \PROGRAM> FILECOPY MYFILE.TXT TARGAETFILE.TXT

C. Write a C program to count total number of consonants in a string.

Q4. (2X10=20 Marks)

A. Write the advantages of functions in C. Also write a function to reverse the contents of 1D array.

B. Write a C program to replace 'a' with 'the' in a file. The other characters should remain unchanged

C. What do you mean by pre-processor directives? List and explain its different categories. Also write the difference between function and macro.

Q5. (2X10=20 Marks)

A. a. What is the recursive function? List out their merits and demerits. Also write a C functon to find GCD of given values using recursion.



End Term (Even) Semester Examination May-June 2025

- B. Define followings:
i) File opening modes ii) fgets() and fputs() iii) fwrite() and fread()
- C. What is a Structure? Design a structure named "Car" to store details like car ID, model, and rental rate per day. Write a C program to input data for three cars, calculate the total rental cost for a specified number of days, and display the results.