

ગુજરાત વિદ્યાપીઠ : અમદાવાદ  
માહિતી, પ્રત્યાયન અને પ્રૌદ્યોગિકી વિદ્યાશાખા  
કમ્પ્યુટર વિજ્ઞાન વિભાગ  
બેચલર ઓફ કમ્પ્યુટર એપ્લિકેશન (B.C.A.), સત્ર - ૨  
વસંત પંચમી સત્રાંત પરીક્ષા : મે -2025

પરીક્ષાર્થી ક્રમાંક

Major : BCSCMJ201T : Computer Programming (C)

તારીખ : 02/05/2025

સમય : 08-00 થી 10-30

વાર : શુક્રવાર

કુલગુણ : 60

લર્નિંગ આઉટકમ

1. To enable student to understand character and string handling
2. To enable student to understand the concept of modular programming
3. To enable students to handle dynamic memory operations
4. To enable student to handle the file and data management connections.

Q-1 (A) Answer the followings (Any 5 out of 6)

05

1. What is the purpose of the null character '\0' in strings?(stringsમાં નલ અક્ષર '\0' નો હેતુ શું છે?)

- A) Terminates the integer      B) Separates characters  
C) Indicates end of the string      D) Acts as a newline character

2. How many characters can the array char str[6] = "World"; store including the null terminator?  
(નલ ટર્મિનેટર સહિત, char str[6] = "World"; એરે કેટલા અક્ષરો સંગ્રહિત કરી શકે છે?)

- A) 4      B) 5      C) 6      D) 7

3. What will be the output of the following code?(નીચેના કોડ નું output શું થશે?)

```
char str[10] = "Hello";  
printf("%s", str);
```

- A) H      B) Hello      C) HelloWorld      D) Compilation Error

4. What is the correct way to declare and initialize a 2-D character array for storing 3 strings each of 20 characters?

(20 અક્ષરોમાંથી દરેક 3 સ્ટ્રિંગ્સ સ્ટોર કરવા માટે 2-D અક્ષર એરે જાહેર કરવાની અને પ્રારંભ કરવાની સાચી રીત કઈ છે?)

- A) char str[20][3];      B) char str[3][20];      C) char str[3][20] = 0;      D) char str = [3][20];

5. What will be the output of this code? (નીચેના કોડ નું output શું થશે?)

```
char str1[10] = "Hi";  
char str2[10] = "There";  
strcat(str1, str2);  
printf("%s", str1);
```

- A) Hi There      B) HiThere      C) Hi      D) Compilation Error

6. Which function compares two strings and returns 0 if they are equal?

(કયું ફંક્શન બે સ્ટ્રિંગ્સની તુલના કરે છે અને જો તે સમાન હોય તો 0 પરત કરે છે?)

- A) strcpy()      B) strlen()      C) strcat()      D) strcmp()

Q-1 (B) Short Answer Questions (Any 2 out of 3)

04

1. What is the importance of the null character \0 in a string?(\0 નું important જણાવો.)

2. What is the purpose of the strcat() function in string manipulation?( strcat() function નો હેતુ શું છે?)

3. Explain the difference between char str[] = "Hello"; and char str[6] = {'H', 'e', 'l', 'l', 'o', '\0'};

**Q-1 (C) Explain in detail. (Any 1 out of 2)****06**

1. Write a C program line to copy one string into another using a built-in function.
2. Write a C program to reverse a string without using the library function `strrev()`. Explain the logic you used. (string reverse માટે નો કોડ લખો `strrev()`નો ઉપયોગ કર્યા વગર)

**Q-2 (A) Answer the followings (Any 5 out of 6)****05**

1. Which is the correct way to declare a function that returns an integer and takes two integers as parameters? (નીચેના માંથી કયું statement સાચું છે.)

A) `function int(int, int);`      B) `int function(int a, int b);`  
C) `int function a, b;`      D) `declare int function(a, b);`

2. What is recursion in C? (recursion શું છે?)

A) Using multiple loops      B) Calling `main()` again and again  
C) A function calling itself      D) Using switch-case repeatedly

3. Which is the correct way to declare an enumerated type for colors? (નીચેના માંથી કયું statement સાચું છે.)

A) `enum color {RED, GREEN, BLUE};`      B) `color enum {RED, GREEN, BLUE};`  
C) `enum {color RED, GREEN, BLUE};`      D) `enum = {RED, GREEN, BLUE};`

4. Which of the following is true about unions? (union માટે શું સાચું છે?)

A) All members share the same memory      B) All members have separate memory  
C) They can't have functions      D) They are only for integers

- 5 What is the output of the macro below? (મેક્રો માટે કયું output સાચું છે)

```
#define SQUARE(x) x*x  
printf("%d", SQUARE(3+2));
```

A) 25      B) 11      C) 9      D) Compilation Error

6. What is the output of the following recursive function? (recursive function માટે કયું output સાચું છે)

```
#include <stdio.h>  
int factorial(int n) {  
    if(n == 0) return 1;  
    else return n * factorial(n - 1);  
}  
int main() {  
    printf("%d", factorial(4));  
    return 0;  
}
```

A) 24      B) 16      C) 5      D) 20

**Q-2 (B) Short Answer Questions (Any 2 out of 3)****04**

1. What is the use of the dot (.) operator in structures? (ડોટ operator નો use શું છે.)
2. Mention difference between structure and union. (તફાવત લખો)
3. Mention difference between call by value and call by reference. (તફાવત લખો)

**Q-2 (C) Explain in detail. (Any 1 out of 2)****06**

1. Write a program in C to declare a structure for student data (roll number, name, marks). Use the dot operator and pointer (arrow -> operator) to access the members.
2. What is recursion? Give one simple example. (recursion શું છે? example સાથે સમજાવો.)

**Q-3 (A) Answer the followings (Any 5 out of 6 )****05**

1. What is the output of the following code? (નીચેના કોડ નું output શું થશે?)

```
#include <stdio.h>
#include <stdlib.h>
int main() {
    int *ptr = (int *)malloc(sizeof(int));
    *ptr = 50;
    printf("%d", *ptr);
    free(ptr);
    return 0;
}
```

A) 50                      B) 0                      C) Garbage                      D) Error

2. Which of the following correctly accesses a structure member using pointer?( નીચેનામાંથી કયું

પોઇન્ટરનો ઉપયોગ કરીને structure member યોગ્ય રીતે એક્સેસ કરે છે?)

```
struct Student { int roll; };
```

```
struct Student *s;
```

A) s.roll                      B) \*s.roll                      C) s->roll                      D) \*s->roll

3. What is the purpose of realloc()?(realloc() નો use શું છે?)

A) To release memory                      B) To allocate zero memory  
C) To increase or decrease the size of previously allocated memory  
D) To free memory used by static variables

4. What is a pointer to a function?( pointer to a function શું છે?)

A) Pointer that returns function name                      B) Pointer that points to a function's return value  
C) Pointer that stores the address of a function                      D) Pointer that stores the return type of a function

5. What will the following code print? (નીચેના કોડ નું output શું થશે?)

```
int a = 10;
int *p = &a;
printf("%d", *p);
```

A) Address of a                      B) p                      C) 10                      D) Error

6. What does a pointer store?( pointer store શું કરે છે?)

A) Value of a variable                      B) Address of a variable  
C) Both value and address                      D) Memory size

**Q-3 (B) Explain in detail. (Any 2 out of 3)****04**

1. What is a pointer in C?( pointer શું છે?)
2. What is the difference between \*ptr and &ptr?( \*ptr and &ptr તફાવત શું છે)
3. Different between malloc and calloc function.(તફાવત લખો)

**Q-3 (C) Explain in detail. (Any 1 out of 2)****06**

1. Explain pointer to array and array of pointers with suitable code examples.( pointer to array ઉદાહરણ સાથે સમજાવો.)
2. Write a C program that declares a structure for a student (roll, name, marks). Create a structure pointer and use the arrow operator (->) to access and display members.

**Q-4 (A) Answer the followings (Any 5 out of 6)****05**

1. What is the correct syntax to open a file in write mode?(સાચી syntax કઈ છે.)

- A) fopen("file.txt", "w");      B) open("file.txt", "w");  
C) fwrite("file.txt");      D) file("file.txt", "w");

2. What will fopen("data.txt", "r") do if the file does not exist?( જો ફાઇલ અસ્તિત્વમાં ન હોય તો fopen("data.txt", "r") શું કરશે?

- A) It will create the file      B) It will display a warning  
C) It will return NULL      D) It will halt execution

3. What does the "a" mode do when opening a file?(ફાઇલ ખોલતી વખતે "a" મોડ શું કરે છે?)

- A) Opens file for reading      B) Appends data to an existing file  
C) Deletes file contents      D) Reads binary data

4. Which function is used to read a character from a file?(ફાઇલમાંથી અક્ષર વાંચવા માટે કયા ફંક્શનનો ઉપયોગ થાય છે?)

- A) putc()      B) getc()      C) read()      D) fread()

5. What happens if you open a file in "w" mode and it already exists?( જો તમે "w" મોડમાં ફાઇલ ખોલો અને તે પહેલાથી જ અસ્તિત્વમાં હોય તો શું થશે?)

- A) It will append new content      B) It will update the content  
C) The file will be overwritten      D) It gives an error

6. What is the purpose of the "rb" mode in fopen()?(fopen() માં "rb" મોડનો હેતુ શું છે?)

- A) Read file in binary mode      B) Read and write  
C) Write file in binary      D) Remove file

**Q-4 (B) Short Answer Questions (Any 2 out of 3)****04**

1. What is a file in C?(c માં file શું છે?)

2. Write the syntax to open a file in read mode.(ફાઇલ ને રીડ કરવા માટેની syntax લખો.)

3. What is the difference between text file and binary file? (તફાવત લખો)

**Q-4 (C) Explain in detail. (Any 1 out of 2)****06**

1. Write a program that creates a text file, writes a string to it, and then reads it back.(એક પ્રોગ્રામ લખો જે ટેક્સ્ટ ફાઇલ બનાવે છે, તેમાં એક સ્ટ્રિંગ લખે છે, અને પછી તેને પાછું વાંચે છે.)

2. Explain file I/O functions in C with examples.( C માં ફાઇલ I/O ફંક્શન્સને ઉદાહરણો સાથે સમજાવો.)

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