

Subject : DATA STRUCTURES THROUGH C

QUIZ MODEL QUESTIONS

1. Define a structure and initialize the structure.
2. How does structure differs from an array?
3. Write the differences between **printf()** and **fprintf()**.
4. What are the common uses of **rewind()** and **ftell()** functions?
5. Write the function to insert an element at specified index using arrays
6. What is derived datatype?
7. What are the similarities between Union and Structures?
8. What is the output of the following code snippet? +-

```
#include<stdio.h>
struct student
{
    char *name;
};
void main()
{
    struct student s,m;
    s.name="ram";
    m=s;
    printf("%s\n%s\n",s.name,m.name);
}
```

9. Explain character I/O functions.
10. How does read and write operations performed on FILES?
11. What is a structure? Give an example.
12. Write prototype of following functions?
a). fprintf() b). fscanf()
13. Write the differences between Text files and Binary files?
14. What is the output of the following code snippet?

```
struct car
{
    struct engine{ int hp,int cc }e;
    struct chasis{ int l,int w }c;
};
void main()
{
    struct car yourcar={{ 68,1400},{ 3200,2358 }},mycar={{ 52,1000},{ 3500,2500 }};
    if(yourcar.c.l>mycar.c.l)
        printf("Your car is lengthier than mine\n");
    else
        printf("My car is lengthier than yours\n");
}
```

15. What is Stream?

ESSAY MODEL QUESTIONS

1. a) Explain Array of Structures with suitable example.

b) Define a user defined data type Complex and write a program to perform addition, subtraction and multiplication of 2 Complex numbers using functions?

2. a) Define a structure called **cricket** that will describe the following information.

Player name

Team name

Batting average

Using **cricket** declare an array **player** with 50 elements and write a program to read the information about all the 50 players and print a team wise list containing names of players with their batting average.

b) What is derived datatype? What are the difference between structure and union?

3. a) What is file and mention its advantages? Explain different operations performed on files?

b) Write a C program to copy contents of one file to another file? (Note: Input file name must be passed from command line)

4. a) Write a C program to create a binary file employee, where details of n employees are written and display the same information?

b) Write a C program to append the content of one file at the end of another file.

5. Define linked list? Write a C program to implement create, insert at specified position, delete specified element operations of list ADT using linked list.

6. Write a C program to implement list ADT and its all Operations using an Array.

7. a). Define structure. Write a C program to pass each member of a structure object as separate argument.

b). Write a C program to count number of lines, words, characters and digits in a given file.

8. a). Write various modes of operations for opening a file. Explain with suitable example.

b). Explain the function fseek() on files. Write a C program to illustrate the use of the function fseek() on files.

9. What is self referential structure? Write a C program to implement linear list and insertion, deletion and search operations on it using arrays.

10. a) Explain the following with suitable examples

i. Nested structures

ii. Pointers to Structures

b) Write a C program to write name, branch and total_marks of at least 10 students to marks.txt file

- using fscanf() and read the same from the file using fprintf().
11. . a). What is ADT? Describe different types of linked list.
b). Explain purpose of the following
a) typedef b) sizeof c) union
12. Write a C program to read contents of given text file, convert all uppercase letters into lowercase letters.
13. a). Write a C program to create a user defined datatype **student** with fields name, roll no and DateOfBirth (create user defined datatype DATE) and display students details.

b). What are the differences between *text streams* and *binary streams*
14. a). What are differences between structures and unions.

b). Explain file status and file pointer position functions
15. Write a C program to read and write details of at least 10 students into binary file student.dat and display the details.
16. Write a C program to implement linear list using arrays with following operations

i. insertion at specified index ii. Deletion at specified index iii. display
17. a). Explain prototype of following functions
i) getchar() ii) getc() iii). putchar() iv). putc()
b). Write a C program that writes the odd – numbers between 500 and 1000 to a text file.
18. a). Explain significance of dot(.) and arrow(->) operators in structures.
b). Write the differences between character I/O binary I/O functions.
