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Question Paper Code : 90917

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2025

Second Semester

Computer Science and Engineering

CS 3251 — PROGRAMMING IN C

(Common to: Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/ Computer and Communication Engineering/ Information Technology)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.

```
#include <stdio.h>
int main()
{
    printf("Hello World! %d\n",x);
    return 0;
}
```

Write the output of the above program.

2.

```
#include <stdio.h>
int main()
{
    int j=1;
    while(j >=255)
    {
        printf("%c %d\n",j,j);
        j++;
    }
    return 0;
}
```

Write the output of the above program.

3. Write the string function to remove the space at the start and end of a given string.
4. String f= "Programming in C";
Write the syntax to find the length of the above String without using built in function.
5. Differentiate constant pointer and pointer to a constant.
6. Write the use of array of pointers.
7. Differentiate between structure and union.
8. Write the syntax of typedef.
9. List the different modes of opening a file.
10. Write the use of fseek() functions.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write a C program using while loop to reverse the digits of the number. (8)
(ii) Discuss about the various data types in C with an example. (8)

Or

- (b) (i) Write a C program to check whether the person is eligible for voting using if/else. (6)
(ii) Explain operators and operator precedence in C with an example. (10)
12. (a) (i) Write a C program to find maximum among set of numbers. (8)
(ii) Write the C program to perform matrix multiplication. (8)

Or

- (b) (i) Write a C program to sort the given List: {5,1,78,9,34,14} using selection sort. (8)
(ii) Write a C program to compare and concatenate the following strings without using built-in functions: (8)
String S1 ="Computer";
String S2 ="Fundamentals";

13. (a) (i) Explain in detail about the Built-in math functions with an example. (6)
- (ii) Write a program to search a particular number in a set of numbers using binary search. (10)

Or

- (b) (i) Write the C program to find the n^{th} term of the Fibonacci series using recursion. (8)
- (ii) Write the C program to swap the values of the two variables using pass by value and pass by reference. (8)
14. (a) A theatre management system keeps track of the movies being played in the theatre, their timings and other details of the movie such as movie name, type (2d/3d), director_name etc. Ticket charges for 2d movies is Rs.120 and ticket charges for 3d movie is Rs. 150. Tax amount for 2d movie is 20% and tax amount for 3d movie is 25%.
- Write a C program to display the bill for the number of members using Array of Structures. (16)

Or

- (b) (i) Explain in detail about Storage classes and visibility using examples. (8)
- (ii) Write a C program to perform the insert and delete operations in singly linked list. (8)
15. (a) A record contains information regarding book store such as book name, bookid, price, author, publication details. Create a file to hold the records of N books. Write a C program:
- (i) To insert new book details into book stores
- (ii) Read all books in file and print available in the book store according to bookid. (16)

Or

- (b) (i) Explain in detail about command line arguments with examples. (8)
- (ii) Compare and contrast sequential and random file access methods. (8)

1. The first step in the process of identifying a problem is to define the problem clearly and concisely.

2. The second step is to gather information about the problem and its causes.

3. The third step is to analyze the information and identify the root cause of the problem.

4. The fourth step is to develop a plan of action to address the problem.

5. The fifth step is to implement the plan and monitor the results.

6. The sixth step is to evaluate the results and determine if the problem has been solved.

7. The seventh step is to document the process and results for future reference.

8. The eighth step is to communicate the results to the relevant stakeholders.

9. The ninth step is to review the process and make any necessary adjustments.

10. The tenth step is to celebrate the success and learn from the experience.

11. The eleventh step is to share the results with others who may be facing similar problems.

12. The twelfth step is to continue to monitor the situation and make any necessary adjustments.

13. The thirteenth step is to maintain a positive attitude and stay motivated.

14. The fourteenth step is to seek help and support when needed.

15. The fifteenth step is to stay focused and persistent.

16. The sixteenth step is to be flexible and adaptable.

17. The seventeenth step is to be patient and persistent.

18. The eighteenth step is to be optimistic and hopeful.

19. The nineteenth step is to be resilient and strong.

20. The twentieth step is to be grateful and appreciative.

21. The twenty-first step is to be humble and modest.

22. The twenty-second step is to be kind and compassionate.

23. The twenty-third step is to be honest and truthful.

24. The twenty-fourth step is to be fair and just.

25. The twenty-fifth step is to be brave and courageous.

26. The twenty-sixth step is to be wise and thoughtful.