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F.E. Semester-II (Revised Course 2016-17)
EXAMINATION FEBRUARY 2021
Programming Languages

[Duration :Two Hours] **[Total Marks : 60]**

Instructions:
1. Answer THREE FULL QUESTIONS with ONE QUESTION FROM EACH PART.
2. Answer to sub questions of a question should be written in continuation to each other. Draw figures and sketches **wherever** necessary.
3. Assume suitable data if **necessary.**

PART-A

1. a) Write a menu driven C program to display the month of the year based on the number entered by the user (numbers from 1 to 12) **(6)**

   b) What do you mean by conditional operator? Explain with an example. **(4)**

   c) Write a C program to accept 'n' numbers from the user and count the number of positive and negative numbers. **(6)**

   d) Find the output of the following code: **(4)**

```
#include<stdio.h>
void abc(int a)
{
        ++a;
}
int main()
{
        int a=10;
        abc(a);
        abc(a);
        printf("%d",a);
}
```

2. a) What is the importance of algorithm in computer science? How does an algorithm differ from a program. **(5)**

   b) Differentiate between iteration and recursion with help of an example. **(5)**

   c) What is Data type. Describe the different data types supported by C language. **(4)**

   d) Write a menu driven C program to display the days of the week based on user's choice **(6)**

3. a) What do you mean by parameter passing? Explain two techniques of parameter passing. **(5)**

b) Devise an algorithm and draw a flowchart to find the reversal of a number. **(5)**

c) Write a C program to create a user defined function cube that will calculate the cube of a number. The cube of number should be calculated using library function. **(5)**

d) Explain the following with examples. **(5)**
i) Function declaration and Prototypes
ii) Function definition and function call

PART-B

4. a) Write a C program to display the matrix multiplication for two matrices **(10)**

b) Write a program to accept marks of 'n' students in an array and compute the average by passing the array to the function. **(10)**

5. a) Explain the following functions with respect to files: **(4)**
i. getc() ii. Putc () iii. getw() iv. putw()

b) Explain Dynamic Memory Allocation **(4)**

c) Write a program to read content from a file and display the content to the user. **(6)**

d) Write a C program to concatenate contents of 2 files and store the output in the third file. **(6)**

6. a) What is an ID array? Explain with examples compile time and run time initialization of ID array. **(4)**

b) The programmer has declared and initialized an array as shown to store marks of 4 subjects. **(6)**

55	66	77	11

The programmer goes ahead and displays the array to his lab instructor. The lab instructor asks the programmer to now search for 77 marks in the array and display the position. Write a C program to implement the above scenario.

c) Write a C program to find smallest and largest element in an array. **(5)**

d) Write a C program to find the transpose of a matrix. **(5)**

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PART-C

7. a) What is the importance of algorithm in computer science? How does an algorithm differ from a program? **(5)**

   b) Write a C program to create a user defined function called square that will print the square of the numbers from 1 to 10. **(5)**

   c) Explain the following String handling function. Demonstrate the use of each with the help of a C program. **(5)**
   i) strrev()
   ii) strcmp ()
   iii) strlen()
   iv) strstr()
   v) strcat()

   d) Explain the concept of Dynamic Memory Allocation. **(5)**

8. a) Differentiate between 'for' loop and 'if-else' condition with the help of examples. **(5)**

   b) Explain the following with examples. **(5)**
   i) Function declaration and Prototypes
   ii) Function definition and function call

   c) Write a C program which adds two matrices of order m x n & print result in matrix form. **(5)**

   d) Explain following functions with syntax with respect to files. **(5)**
   a) putc() b)fprintf() c) fscanf() d) ftell() e)fopen()

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