

USN

15CCP14CCP14/24/16CCP24

Second Semester B.E. Semester End Examination, May / June 2018
CONCEPTS OF C PROGRAMMING

Time: 3 Hours Max. Marks: 100

Instructions: 1. UNIT II & UNIT IV are compulsory.

2. Answer any one full question from the remaining UNITS.

1. a. Write an algorithm and draw flowchart to compute the GCD of two numbers. (Level [3], CO [1], PO [3]) 08 M
b. Explain the basic structure of C program with a block diagram. (Level [2], CO [2], PO [1]) 06 M
c. Analyze the following source code for syntax and logical representation. Identify the errors in each line of the following source code if any.
- ```
#include<stdio.h>
#include<math.h>
MAIN()
{
 int num1, num2,sum;
 printf("Enter two numbers:");
 scanf("%d%d", &num1, &num2);
 sum=num1 + num2;
 printf("Sum = %d", sum);
}
```
- UNIT - I OR (Level [3], CO [3], PO [4]) 06 M
2. a. Write the output of the following operators. Given a=5, b=3, c=6 , d = 4, e = 6  
1) f = a & c 4) X = (a > b) || (c != e)  
2) Q = b > e 5) Y = (c ^ d)  
3) R = c != d 6) Z = b >> 1  
b. Why type conversion is required? Explain the two types of type conversion in C with an example for each. (Level [3], CO [4], PO [1]) 06 M  
c. Explain any four C tokens available in C. (Level [2], CO [2], PO [1]) 08 M
- UNIT - II OR (Level [3], CO [3], PO [4]) 06 M
3. a. What will be the output of the program?  
i) 

```
#include<stdio.h>
int main()
{
 int i=0;
 for (i<=5; i++)
 printf("%d", i);
 return 0;
}
```

(Level [3], CO [4], PO [1]) 06 M

- b. Write a program in C to read a value for 'n' and generate the following triangle:  
for example if n=4

```
* * *
* *
*
```

(Level [3], CO [3], PO [3])

- c. Explain the following statements in C:  
i. goto    ii. continue    iii. break

(Level [2], CO [2], PO [12])

- 4 a. Explain the initialization of one Dimensional array with examples.

(Level [2], CO [2], PO [1])

- b. Belagavi City Traffic Police wants to introduce Odd-Even vehicle day policy in Belagavi. In this regard to do a survey, they have requested your help to develop a C program. This program will read and store all the vehicle plate numbers (only 04 digit integer numbers) parked near bus stand (which is having space to park 100 vehicles) on one specific day. The program needs to print the number of vehicles with even and odd numbers separately. Write a C program for the same.

(Level [3], CO [3], PO [3])

- c. Analyze the following declarations, state whether they are valid or invalid, if valid then what that declaration does and if invalid why it is invalid.

```
1) int sum[4] = { 1, 4, 5}; 4) int [sum] 10 ;
2) int add[5] = {1,0}; 5) float [res][10];
3) int divf] = {10,20,30}; 6) float sum[2] = 20, 30;
```

(Level [3], CO [4], PO [4])

**OR**

- 5 a. Explain the initialization and declaration of 2-Dimensional array.

(Level [2], CO [2], PO [1])

- b. Mr. John wants to go for a tour. The details of the package (In Rupees) are shown below (val).

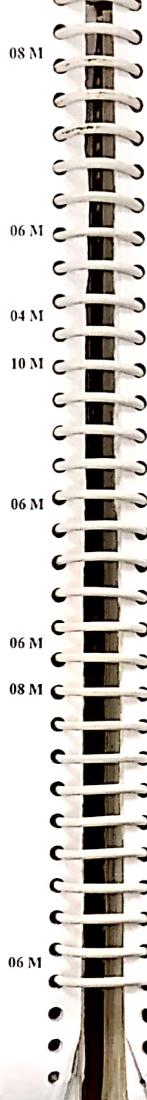
| Month \ Package | JAN  | FEB  | MAR  |
|-----------------|------|------|------|
| REGULAR         | 2000 | 3000 | 1800 |
| SEMI-DELUXE     | 4000 | 1500 | 5000 |
| SUPER - DELUXE  | 5500 | 5000 | 6000 |

Write a C program to store the above package information in two dimensional arrays. Also write the code to help Mr. John to find out what is the lowest package value and what is the highest package value from the overall package shown.

(Level [3], CO [3], PO [3])

- c. Given a matrix A & B is as follows

$$A = \begin{matrix} 1 & 2 & 3 \\ 4 & 2 & 5 \\ 3 & 2 & 7 \end{matrix} \quad B = \begin{matrix} 3 & 4 & 5 \\ 5 & 4 & 8 \\ 4 & 7 & 9 \end{matrix}$$



Find the output of the following.

```
1) Sum = A[2][1] + B[0][0];
2) Sub = A[0][2] - B[2][2];
3) Res = A[0][2] & B[1][2];
4) Val = A[2][0] ^ B[0][1];
5) P = A[0][0] | A[2][1];
6) R = A[1][2] > B[2][2];
```

(Level [3], CO [3], PO [4])

#### UNIT - IV

- 6 a. What are strings in C? How strings are declared and initialized in C? Explain with example

(Level [3], CO [2], PO [3])

- b. Write a program in c to check whether the given string is palindrome.

(Level [3], CO [3], PO [3])

- c. Explain the following string handling functions with examples

1) streat    2) strcmp    3) strcpy

(Level [2], CO [2], PO [3])

#### UNIT - V

- 7 a. List and explain the various elements of user defined functions.

(Level [2], CO [2], PO [1])

- b. Write a C program using function to check whether a given integer number is prime or not.

(Level [3], CO [3], PO [3])

- c. Explain the need for user defined functions.

(Level [2], CO [2], PO [1])

**OR**

- 8 a. List and explain the various categories of functions with an example for each.

(Level [2], CO [2], PO [1])

- b. Write a C program to display prime numbers between given range of numbers n1 and n2 using functions.

(Level [3], CO [3], PO [3])

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15CCP14/24/CCP14/16CCP14

**First Semester B.E. Semester End Examination, Dec/Jan 2017-18**

**CONCEPTS OF C-PROGRAMMING**

Time: 3 Hours

*Instructions:* 1. UNIT-II and UNIT-IV are compulsory.

2. Answer any ONE full question from remaining units.

Max. Marks: 100

**UNIT - I**

- 1 a. Write a flow chart and algorithm to find average of best two out of three marks obtained in a subject in an IA test. 06 M

- b. What is variable? How variables are declared in C? Write a program to display the memory requirement for int, float and double variables on a given machine. 06 M

- c. List and explain logical and bit wise operators in C with suitable examples for each. 08 M

(Level[3], CO[1], PO[3])

- i. increment ii. decrement operators iii. modulo operator iv. conditional operator

(Level[2], CO[2], PO[12])

04 M

- b. Which are the special operators in C? Discuss their applications in brief.

(Level[2], CO[2], PO[1])

08 M

- c. Write a program in C to find largest of three integer numbers.

(Level[3], CO[3], PO[2])

- 3 a. Write a program to display the grade for a given marks using the grade sheet given below: 06 M

| Grade | A    | B    | C    | D    | E    | F    |
|-------|------|------|------|------|------|------|
| Marks | >=90 | >=80 | >=70 | >=60 | >=50 | >=40 |

Demonstrate the use of switch statement.

(Level[3], CO[3], PO[3])

- b. Differentiate between while and do...while loops with the help of flow diagram and example. 06 M

(Level[4], CO[2], PO[12])

08 M

- c. Write a C program to display reverse of a positive integer number.

(Level[3], CO[1], PO[1])

08 M

**UNIT - III**

- 4 a. Write a program to read marks obtained by the N students in an integer array and display the highest marks. 06 M

- b. Identify errors, if any, in each of the following statements, assuming that ROW and COLUMN are declared as symbolic constants:

- i. int score(100);  
ii. float values[10,15];  
iii. float average[ROWS][Column];  
iv. int sum[1];  
v. int arrayx[COLUMN];  
vi. long int number[ROW];

(Level[4], CO[4], PO[4])

08 M

- c. Explain memory layout of two dimensional array and also give the mathematical expression to calculate the effective address of element stored at  $i^{th}$  row and  $j^{th}$  column.

(Level[2], CO[2], PO[12])

OR

5

a. Identify the errors, if any, in each of the following statements:

- i. int number[ ] = {0,0,0,0,0};
- ii. float item[2] = {0,0,0,0};
- iii. int word[3][2] = {0,1,2,3,4,5};
- iv. int np[2,4] = {{A,B,C,D},{E,F,G,H}};
- v. float result[10]=0;

b. Write a program to search a number from an integer array of N elements using binary-search technique.

(Level[ 4 ], CO[ 2 ], PO[ 8 ])

05 M

c. What happens when an array with a specified size is assigned with values more than the specified size, and

- i. with values fewer than the specified size; and
- ii. with values more than the specified size; and

Explain with suitable example.

Time: 3

6

a.

Character string in C is automatically terminated by a null character. Explain how this feature helps in string manipulation. Also write a program to reverse the string and check whether it's a palindrome. (Hint: init is a palindrome)

(Level[ 2 ], CO[ 2 ], PO[ 12 ])

08 M

b. Assume s1, s2, s3 and s4 are declared as follows:

```
char s1[10]={"bc"}, s2[20]={"abc", s3[30], s4[30];
printf("%s", strcpy(s3,s1));
printf("%s", strcat(s3,(strcpy(s4,s1), s2)));
printf("%d%d", strlen(s2),strlen(s3), strlen(s4));
```

What will be the output of following statements when executed in sequence?

(Level[ 3 ], CO[ 3 ], PO[ 2 ])

06 M

c. Write a program to count number of vowels in a given string.

(Level[ 4 ], CO[ 4 ], PO[ 2 ])

07 M

d. What are functions in C? What is the need of user defined functions? Give the general format for function definition.

(Level[ 3 ], CO[ 1 ], PO[ 3 ])

06 M

e. Distinguish between the following with sample code:

(Level[ 2 ], CO[ 2 ], PO[ 1 ])

06 M

i. Actual parameter and formal parameter

(Level[ 2 ], CO[ 2 ], PO[ 1 ])

06 M

ii. Global Variable and local variable

(Level[ 4 ], CO[ 4 ], PO[ 2 ])

06 M

iii. Write a function in C to read array elements and display elements at odd and even index on two different lines.

(Level[ 3 ], CO[ 1 ], PO[ 12 ])

08 M

a. List and explain any four categories of functions in C.

(Level[ 3 ], CO[ 1 ], PO[ 3 ])

04 M

b. Write a function that reads "m" by "n" matrix and displays smallest element.

(Level[ 2 ], CO[ 2 ], PO[ 1 ])

06 M

c. Write a function to display row sum and column sum of a "m" by "n" matrix

(Level[ 3 ], CO[ 1 ], PO[ 12 ])

10 M

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First Semester B.E. Makeup Examination, January 2018  
**CONCEPTS OF C PROGRAMMING**

Time: 3 Hours

S M

Max. Marks: 100

- |    |    |                                                                                                                                                                                                                                                                                                                    |      |
|----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|    | a. | Write an algorithm and draw a flowchart to find largest of three numbers.<br><b>UNIT - I</b><br><br>OR<br><br>(Level [1, 2], CO [1], PO [1])                                                                                                                                                                       | 08 M |
| 5  | a. | Explain the basic structure of C program with neat diagram.<br><br>(Level [2, 3], CO [2], PO [1])                                                                                                                                                                                                                  | 06 M |
| b. |    | Write a program to find area of circle for a given radius.<br><br>(Level [3, 3], CO [3], PO [3])                                                                                                                                                                                                                   | 06 M |
| c. |    | Define type conversion. Explain the various types of type conversion with an example for each.<br><br>a. What are C tokens? Explain the various C tokens.<br><br>(Level [2, 2], CO [2], PO [1])                                                                                                                    | 07 M |
| 3  | a. | Explain Bitwise operators with an example for each.<br><br><b>UNIT - II</b><br><br>a. Explain the syntax of the following with flow diagram and an example for each<br>a. switch    b. if else ladder<br><br>b. Differentiate between while and do while looping constructs.<br><br>(Level [1, 2], CO [2], PO [1]) | 08 M |
| b. |    | Write a C program to verify whether an entered number is prime or not.<br><br>(Level [1, 3], CO [1], PO [1])                                                                                                                                                                                                       | 05 M |
| c. |    | Write a C program to read two one dimensional arrays P[ ] and Q[ ] and compute the sum and store in another one dimensional array R[ ].<br><br><b>UNIT - III</b><br><br>(Level [1, 2], CO [2], PO [1])                                                                                                             | 05 M |
| 4  | a. | Define Arrays. Explain the syntax of 1-d array with an example.<br><br>(Level [1, 2], CO [2], PO [1])                                                                                                                                                                                                              | 05 M |
| b. |    | Write a C program to search an element in a given array using binary search technique and display appropriate message if element is found.<br><br>(Level [3, 3], CO [3], PO [1])                                                                                                                                   | 07 M |
| c. |    | Write a C program to read two one dimensional arrays P[ ] and Q[ ] and compute the sum and store in another one dimensional array R[ ].<br><br>(Level [1, 3], CO [3], PO [1])                                                                                                                                      | 08 M |
| 5  | a. | Explain the syntax of 2-d array with an example.<br><br>(Level [2, 2], CO [2], PO [1])                                                                                                                                                                                                                             | 05 M |
| b. |    | Write a C program to find largest element in a 2-d array.<br><br>(Level [3, 3], CO [3], PO [1])                                                                                                                                                                                                                    | 07 M |
| c. |    | Write a C program to find the sum of principle diagonal elements in a given matrix.<br><br>(Level [3, 3], CO [3], PO [1])                                                                                                                                                                                          | 08 M |
|    |    | <b>UNIT - IV</b>                                                                                                                                                                                                                                                                                                   |      |
| 6  | a. | Explain how string variables are initialized and declared with an example.<br><br>(Level [2, 1], CO [1], PO [1])                                                                                                                                                                                                   | 06 M |

b.

Explain the various string handling functions with an example for each.

c. Write a C program to count the number of occurrences of a given characters in a string. (Level [ 2 ], CO [ 2 ], PO [ 1 ])

7 a. Explain the need for user defined functions. UNIT -V (Level [ 3 ], CO [ 3 ], PO [ 12 ]) 0.8 M

b. List the various categories of functions. Explain any two in detail. (Level [ 2 ], CO [ 2 ], PO [ 1 ]) 0.3 M

c. Write a C program to find the factorial of a given number. Use functions to compute the factorial where the given number is passed from the main program. (Level [ 2 ], CO [ 2 ], PO [ 1 ]) 0.7 M  
(Level [ 2 ], CO [ 2 ], PO [ 1 ]) 10 M

8 a. Explain the various elements of user defined functions. OR (Level [ 3 ], CO [ 3 ], PO [ 12 ]) 0.3 M

b. Write a C program to add two given matrices. Use functions to compute the following: (Level [ 2 ], CO [ 2 ], PO [ 1 ]) 0.4 M

- Read matrices
  - Display matrices
  - Compute addition
- (Level [ 3 ], CO [ 3 ], PO [ 12 ]) 10 M

c. Write a C program to swap the contents of two variables. Write a function to compute the swapping where two numbers are passed from main program. (Level [ 3 ], CO [ 3 ], PO [ 12 ]) 0.6 M

**Second Semester B.E. Semester End Examination, April/May 2016-17**

**CONCEPTS OF C-PROGRAMMING**

Time: 3 Hours

Max. Marks: 100

*Instructions:* 1. UNIT-II and UNIT-III are Compulsory.

2. Answer any one question from remaining units.

3. Write comments in the programs where ever necessary.

4. Write sample input/output for the program where ever necessary.

- UNIT - I**
- 1 a. What is variable in C? Give rules for declaring variable in C. (Level[ 1 ], CO[ 2 ], PO[ 8 ] ) 08 M
- b. What are the qualifiers? Which are the qualifiers that an int and double can have? (Level[ 1 ], CO[ 2 ], PO[ 8 ] ) 04 M
- c. Identify the syntax error in the following program. After corrections, what output would you expect when it is executed. (Level[ 1 ], CO[ 2 ], PO[ 8 ] ) 08 M
- ```

1. #include<stdio.h>
2. #define PI 3.14159
3. main()
4. {
    int R,C;
    float perimeter;
    float area;
    C=PI
    R=5;
    10. Perimeter=2.0*C*R;
    Area = C*R*R;
    12. Printf("%f", "%d", &Perimeter, &Area);
13. }
```
- OR**
- 2 a. Discuss the precedence of following operators with suitable example. (Level[1], CO[2], PO[8]) 08 M
- i. Arithmetic operators ii. Relational operators
- b. Write a program to print the size of primitive data types in C. (Level[3], CO[2], PO[2]) 04 M
- c. Given values of variables x, y and z write program to rotate their values such that x has value of y, y has value of z and z has value of x. (Level[3], CO[2], PO[11]) 08 M
- UNIT - II**
- 3 a. Explain the following branching statements with syntax by giving suitable examples: (Level[2], CO[2], PO[8]) 06 M
- i. else...if ladder ii. switch statement
- b. Write for loop statements to print each of the following sequence of integers. (Level[2], CO[2], PO[8]) 08 M
- i. 1, 2, 4, 8, 16, 32
 - ii. 1, 3, 9, 27, 81, 243
 - iii. -4, -2, 0, 2, 4
 - iv. -12, -14, -18, -26, -42
- (Level[3], CO[2], PO[2])

- c. Write a C program to generate Fibonacci sequence of first "n" numbers (Hint: Fibonacci Sequence: 0, 1, 1, 2, 3, 4, 7, 11... and $n > 2$). (Level[3], CO[1], PO[2])

UNIT - III

What is the syntax to create single dimensional array? Give an example. (Level[1], CO[2], PO[8])

- a. What are arrays? What is the syntax with respect to its size. 04 M

- b. What happens when an array is initialized by the following cases with respect to its size.

i. With values fewer than that the specified size.

ii. With values more than the specified size. (Level[3], CO[1], PO[11])

- c. The annual examination results of 100 students are tabulated as follows:

Roll No	Subject 1	Subject 2	Subject 3
1	85	90	88

Write the C program to read the data for all students and determine the following:

i. Total marks obtained by each student.

ii. The student who has obtained the highest total marks. (Level[3], CO[3], PO[2])

UNIT - IV

Explain following string handling functions with examples: (Level[1], CO[2], PO[8])

- a. Explain following string handling functions with examples: (Level[1], CO[2], PO[8])

- b. List and explain any two categories of functions and also write examples for each. 08 M

- c. The function test is coded as follows:

```
int test ( int number )
{
    int m, n=0;
    while (number)
    {
        m=number%10;
        if (m%2)
            n=n+1;
        number=number/10;
    }
    return (n);
}
```

What will be the values of x and y when following statements are executed?
`int x = test(135);
int y = test(256);` (Level[4], CO[4], PO[2])

OR

- a. Give the syntax of designing structure in C. Design a structure called employee to store employee information. (Level[1], CO[2], PO[8])

- b. Design a structure called time struct containing three members integer hour, integer minute and integer second. Develop a C program that would assign values to the individual members and display the time in the following form:
16:40:51 (Level[3], CO[2], PO[2])

- c. Write a C program using function to check whether a given positive integer number is prime number or not, the function should return 1 (one) if the number is prime else it should return 0 (zero). (Level[3], CO[1], PO[2])

UNIT - V

What is pointer? How do you declare & initialize pointer variables in C? (Level[1], CO[2], PO[11])

- a. Write a C program using pointers to read an array of integer elements and print them in reverse order. (Level[3], CO[2], PO[2])

- c. What is the meaning of scale factor with reference to pointers? Also list rules of pointer operations. (Level[2], CO[1], PO[2])

OR

- a. Write a function using pointer to exchange the values stored in two locations in the memory. (Level[1], CO[1], PO[11])

- b. Explain the following file handling functions in C: i. fopen ii. fprintf iii. fscanf iv. fclose (Level[2], CO[2], PO[8])

- c. Write a C program to copy the contents of one file to another. (Level[3], CO[3], PO[2])

Second Semester B.E. Makeup Examination, April/May 2016-17**CONCEPTS OF C PROGRAMMING**

Time: 3 Hours

Max. Marks: 100

- Instructions:**
1. UNIT-II and UNIT- III are Compulsory.
 2. Answer any one question from remaining units.
 3. Write comments in the programs where ever necessary.
 4. Write sample input/output for the program where ever necessary.

UNIT - I

- 1 a. What are tokens in C? Give classification of tokens in C. (Level[1], CO[2], PO[8]) 06 M
- b. List and explain logical and bit wise operators in C with suitable examples for each. (Level[1], CO[2], PO[8]) 08 M
- c. Find out the output of the following programs:
- i. #include<stdio.h>
main()
{
int x=100;
printf("%d\n",10 + x++);
printf("%d\n",10+ ++x);
}
 - ii. #include<stdio.h>
main()
{
int x=5,y=10,z=10;
x= y ==z;
printf("%d",x);
}
 - iii. #include<stdio.h>
main()
{
int x=10;
if(x = 20)
printf("True");
else
printf("False");
}
- (Level[4], CO[2], PO[11]) OR

- 2 a. Discuss the precedence of Arithmetic Operators with suitable example. (Level[1], CO[2], PO[8]) 06 M
- b. With suitable examples explain sizeof operator and conditional operator. (Level[2], CO[2], PO[8]) 06 M
- c. Write a program in C that reads a floating point number and displays right most digit of the integral part of the number and also checks whether the extracted digit is even odd using conditional operator and display proper message on screen. (Level [3], CO[1], PO[2]) 08 M

UNIT - II

- 3 a. Explain the following branching statements with syntax by giving suitable examples: 06 M
- i. nested if else ii. switch statement
- (Level[2], CO[2], PO[8]) b. Write for loop statements to print each of the following sequence of integers. 08 M
- i. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
 - ii. 1, 3, 9, 27, 81, 243
 - iii. -6, -4, -2, 0, 2, 4, 6, 8, 10
 - iv. -12, -14, -18, -26, -42
- (Level[3], CO[2], PO[2]) Scanned by CamScanner

c. Write a C program to print the nth Fibonacci number where $n \geq 2$

06 M

UNIT - III
(Level[3], CO[1], PO[2])

06 M

- a. What are arrays? Write the syntax to create two dimensional arrays with an example.
- b. What happens when an array is initialized by the following cases with respect to its size?
- with values fewer than that the specified size.
 - with values more than that the specified size.

i. (Level[3], CO[1], PO[1])

04 M

- c. The daily maximum temperatures recorded in 5 cities during the month of January for first one week have been tabulated as below:
- | City 1 | City 2 | City 3 | City 4 | City 5 |
|--------|--------|--------|--------|--------|
| Day 1 | | | | |
| Day 2 | | | | |
| Day 3 | | | | |
| Day 4 | | | | |
| Day 5 | | | | |
| Day 6 | | | | |
| Day 7 | | | | |

10 M

Write the C program to read the table of elements into a two-dimensional array called temperature and to find city and day corresponding to:

- the highest temperature.

- ii. the lowest temperature.
- UNIT - IV
(Level[3], CO[3], PO[2])
- 04 M
- a. Explain following string handling functions with examples:
- strlen
 - strcmp
 - strcpy
 - strncpy

08 M

- b. Write C program to find the factorial of given integer using function.
- (Level[2], CO[2], PO[8])
- 08 M

- c. Determine the output of the following program:

08 M

```
#include <stdio.h>
int prod(int a, int b)
{
    int result = 1;
    for (int i = 1; i <= b; i++)
        result *= a;
    return result;
}

int main()
{
    int x = 10, y = 20, z = 5;
    int p, q;
    p = prod(x, y);
    q = prod(p, z);
    printf("%d\n", q);
}
```

(Level[4], CO[1], PO[11])

OR

- a. Give the syntax of designing structure in C. Design a structure called student to store student information.
- (Level[1], CO[2], PO[8])
- 07 M

- b. Design a structure called date_struct containing three members integer day, integer month and integer year. Develop a C program that would assign values to the individual members and display the date in the following form : 21/2/2017
- (Level[3], CO[2], PO[2])

- c. Write a C program using function to check whether a given positive integer number is even or odd. The function should return 1 (one) if the number is even or it should return 0(zero) if the number is odd

UNIT - V
(Level[3], CO[1], PO[2])

04 M

- b. Write a C program using pointers to read array of integer elements and print sum and average of all the elements.

(Level[1], CO[2], PO[11])

08 M

- c. What is the meaning of scale factor with reference to pointers? Also list rules of pointer operations.

OR
(Level[2], CO[1], PO[2])

08 M

- b. Write a C program using function to exchange contents of two pointer variables.

(Level[3], CO[2], PO[2])

04 M

- c. Write a C program to read 10 numbers from keyboard and and write the contents to a text file and then display the contents of file on the screen.

(Level[3], CO[3], PO[2])

08 M

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15CCP24

Second Semester B.E. Degree Semester End Examination, APRIL / MAY 2015-16

Concepts of C Programming

Max. Marks: 100

Time: 3 Hours

- Instructions:**
1. Unit I and 2 are compulsory
 2. Solve any 1 full question from each of remaining units, Unit III to Unit V
 3. Max. marks will be scaled to 50 Marks for SGPA and CGPA calculation

UNIT - I

1. a. Why are identifiers used in a program? Explain the rules to frame identifiers with examples. (Level [1], CO [3], PO [b]) 06 M
b. Write a C program to calculate simple interest.(Use messages) (Level [3], CO [1,3,4], PO [b]) 08 M
c. Draw a flowchart to find the sum of N numbers (Level [3], CO [4], PO [b]) 06 M

UNIT - II

2. a. Compare Switch and Nested If programming constructs with sample program segments. (Level [2,3], CO [3], PO [b]) 08 M
b. Write a program to read 6 subject marks, calculate percentage and display the result based on percentage as Fail for below 40%, Pass for 40% and above, Second Class for 50% and above, First Class for 60% and above and Distinction for 70% and above. (Level [3], CO [1, 3], PO [b]) 12 M

UNIT - III

3. a. For a class of 60 students, you need to store their Mathematics marks in an appropriate data Structure. With program segment show how you will read and print the marks. (Level [2,3], CO [3], PO [b]) 10 i
b. What are Strings in C? Initialize a string with 10 characters. Write a program to count and display the number of times the character 'a' appears in that string. (Level [3], CO [1,3], PO [b]) 10
OR
4. a. Write a program to find out whether two input strings are of the same length. Do not use strlen() function. (Level [2,3], CO [3], PO [b]) 11
b. What kind of array will you use to store 10 names? Write a program to search whether a given input name is present in a list of names & display suitable messages for its presence or absence. (Level [2,3], CO [3], PO [b]) 1

UNIT - IV

5. a. Differentiate between Library and User defined function. Give at least 3 examples of library functions. Write a user defined function to square a given number. (Level [3], CO [1,3], PO [b])
b. Write a program to store information about 3 mobile phones in a suitable data structure. The information should contain phone brand name, model name and price. The output of program must be total price of all 3 mobiles put together. (Level [3], CO [3], PO [b]) 8

OR

- a. Explain concept of Recursion in functions. Write a recursive function to calculate Factorial of a given number.
(Level [3], CO [1,3], PO [b])
- b. Describe Array of Structure with a suitable program.
(Level [2], CO [1,3], PO [b])

10 M

10 M

USN

UNIT - V

- a. How do Pointers help in making C programs better? Explain Pointer declaration, initialization and pointer arithmetic.
(Level [2,3], CO [3], PO [b])
- b. Write a program to read characters from an existing text file and print them on screen.
(Level [3],CO [3], PO [b])

10 M

10 M

Time:
Instruction

OR

- a. Using Pointer concept, write a program to read 10 numbers. Display the mean of these numbers and also display all 10 numbers.
(Level [3], CO [1,3], PO [b])
- b. Explain any 5 file functions with usage syntax.
(Level [2], CO [1,3], PO [b])

10 M

10 M

1 a.
b.
c.

2 a.

b.

c.

3 a.

b.

c.

4 a.

Concepts of C Programming

Time: 3 Hours Max. Marks: 100

- Instructions:**
1. Questions from unit-I and Unit-II are Compulsory
 2. Answer any full question from each of the other Units
 3. Max. marks will be sealed to 50 Marks for SGPA and CGPA calculation

UNIT - I

1. a. Describe the structure of a typical C program with detailed explanation of each line or section
 (Level [1], CO [3], PO [b]) 10 Marks

- b. What are Identifiers? Illustrate with examples the rules for naming identifiers.
 (Level [1], CO [3], PO [b]) 5 Marks

- c. Write a program to read 3 integers and print the sum and mean.
 (Level [3], CO [1,3], PO [b]) 5 Marks

Unit-II

2. a. In a student academic performance management system, the students will be graded (say F for first class, S second class and so on) based upon the percentage obtained. Suggest and explain appropriate C Program construct to solve the above problem.
 (Level [2], CO [3], PO [b]) 6 Marks

- b. Write a program to calculate electricity bill based on the following information
 Consumption Units Rate of Change
 0-199 3 Per unit
 200-399 Rs 300/Rs 3.75 per unit exceeding 200 units
 400-599 Rs 1000+Rs 8 per unit exceeding 400 units
 Above 600 Rs 2500+Rs 5 per unit exceeding 600 units

- C Write a program to reverse the given integer number.
 (Level [3], CO [1,3], PO [b]) 6 Marks

UNIT - III

3. a. An application program requires to store only marks obtained for 100 students (like 35, 45, 67,...). Suggest and explain appropriate data structure to store and retrieve marks Using an appropriate C program.
 (Level [2,3], CO [3], PO [b]) 10 Marks

- b. Write a program to read the name of a person and store it in a character array variable fname, then read surname and store it in a character array variable, surname and then join the two array of character and display it.
 (Level [3], CO [1,3], PO [b]) OR
 (Level [3], CO [1,3], PO [b]) 10 Marks

4. a. Identify library functions which are available in string.h header file. Explain these library functions with examples.
 (Level [2], CO [3], PO [b]) 10 Marks

- b. Write a C program to accept two matrix of size m and n, p and q, carry out addition of matrix and display the result.(Use appropriate messages)
 (Level [3], CO [1,3], PO [a,b])
UNIT - IV 10 Marks

5. a. Identify and explain different types of functions with examples.
 (Level [2,3], CO [1,3], PO [b]) 3 Marks

- b. Inspect and identify the errors in the following program and rewrite the correct version of the program.
 (Level [2,3], CO [1,3], PO [b]) 4 Marks

- ```

#include<stdio.h>
structure stud
{
 char studname;
 char div;
 int roll_no;
 long int mobile_num;
}
main()
{
 stud s1={'xyz','x','0','42'};
}

c. Write a structure named book having the following structure members which are Book_name, price, author name and pages. Assume appropriate data type for each structure member: given the input as book name write a program to display the author name and price of the book.

```
- 8marks
- 6 a. Suggest and explain a data structure which is most suitable to store information Related to a customer like customer name, customer address, profession, Mobilenumber, etc with example.
- OR
- b. Write a C program to call a function name add, which adds two number and displays Result.
- c. Write a recursive function to calculate factorial of given number.
- (Level [ 3 ], CO [ 1,3 ], PO [ b ])
- 7 a. Suggest and explain the concept of C which accesses address of variable in the program with its declaration and initialization. Give appropriate example for same.
- b. Write and explain the following function of file 1.fopen() 2.fgetc() 3.fputc() 4.fclose And write C program to demonstrate above function.
- UNIT - V
- 8 a. Write a program to copy one file into another. Copy one character at a time.
- b. Write a program to find mean of n numbers using pointers concept.
- (Level [ 3 ], CO [ 1,2 ], PO [ a,b ])
- 10 Marks
- (Level [ 3 ], CO [ 1,3 ], PO [ b ])
- 10 Marks