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Code No: A2CS01

MLR 16

MLR INSTITUTE OF TECHNOLOGY

(AUTONOMOUS)

I B.Tech I Semester Regular Examinations, December-2016

COMPUTER PROGRAMMING

(Common to all Branches)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A

1. a) Evaluate the expression $2+3*4/5-6$ based on operator precedence. [2M]
 b) Convert the following equation into corresponding C statement $\sqrt{a^2+b^2}$. [2M]
 c) Define an array. Write the syntax for 2D array declaration. [2M]
 d) Predict the output of the following program [2M]


```
int main()
{
    int a[ ]={ 10,20,30,40,50}, *p;
    p=a;
    *p++;
    printf ("%d", *p);
    return 0;
}
```
- e) Differentiate between structure and union. [2M]
2. a) Define a token and classify various tokens in C language. [3M]
 b) Define a Constant and classify various types of constants in C Language. [3M]
 c) Differentiate Actual arguments with formal arguments. [3M]
 d) List the functions available for Dynamic Memory Allocation. [3M]
 e) Define File. Write a program statement to create new file called "new.doc". [3M]

PART-B

3. a) Draw the flow chart to check whether a given number is prime or not. [4M]
 b) With an example, explain the different data types of C programming language. [6M]

OR

4. a) Discuss in detail about Bitwise operators in C with examples. [5M]
 b) Write a C program to print electricity bill of a customer based on number of units consumed by using the following conditions. [5M]


```
If units<= 200, charge=0.6
If units>200 and units<=300, charge=0.75
If units>300, charge=1.00
If bill amount exceeds 400 then additional surcharge of 15% on the total amount. And print consumer name and total amount to be paid.
```

5. a) Distinguish between While and Do-while control loops with examples. [5M]
b) Any number x is called **coloured number** if it does not contain any substring y with the property that the product z of all the digits of y is not equal to any of the substrings of x . (For example, take $x = 263$, then its substrings are 2, 6, 3, 26, 63, 263 only. Now, take any Substring $y = 26$ then $z = 2*6 = 12$ or $y = 63$ then $z = 6*3 = 18$. Neither z is a substring of 263). Write a C program to check whether the given any three digit number is coloured number or not. [5M]

OR

6. a) Write the purpose of *continue*, *goto* and *break* statements [5M]
b) Write a C program to determine whether the given number is Armstrong number or not by using do-while loop. [5M]
7. a) Explain the classification of functions based on arguments and return values with suitable examples. [6M]
b) Write a C program which replaces each diagonal element $A[i][j]$ of a given matrix A with $\text{Maximum}\{A[i][j], \text{sum of elements in } i^{\text{th}} \text{ row, sum of elements in } j^{\text{th}} \text{ column}\}$ [4M]

OR

8. a) What is recursion? Write a recursive program to solve the problem of Towers-of-Hanoi. [5M]
b) What is an array? Explain the declaration and initialization of one and two dimensional arrays with examples. [5M]
9. a) Explain in detail about the concept of Dynamic memory allocation with examples. [5M]
b) Define String. Explain the following string handling functions with examples. [5M]
i) strcpy() ii) strcmp() iii) strstr() iv) strcat()

OR

10. a) Distinguish between array of pointers and pointer to an array? Explain pointer to pointer concept with an example. [6M]
b) Write a program to concatenation of two strings. [4M]
11. a) Define a file and discuss about reading, writing, opening and closing of a file. [5M]
b) Write a C program that compares two files and display message "Equal" or Not equal". [5M]

OR

12. a) Explain random access file functions with suitable examples. [5M]
b) Write a program to copy the contents of a file into another file. [5M]
