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B.TECH
BE2105

1st Semester Back Examination 2016-17
PROGRAMMING IN 'C'
BRANCH(S): ALL
Time: 3 Hours
Max Marks: 70
Q.CODE: Y723
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) What do you mean by data type?

b) Differentiate between structure and union in C

c) What is a pointer?

d) What do you mean by recursion?

e) What is a static storage class?

f) What do you mean by Call by reference?

g) What are different operators used in C?

h) What are various constants used in C?

i) Find the output of the program.
```c
int main()
{
    int i=0;
    for(; i<=5; i++);
        printf("%d", i);
    return 0;
}
```

j) Find the output of the following program.
```c
int main()
{
    int fun(int);
    int i = fun(10);
    printf("%d\n", --i);
    return 0;
}
int fun(int i)
{
    return (i++);
}
```

Q2 **a)** Why "switch" Statement is used? Design a Menu based program for addition, subtraction, multiplication and division of two complex numbers. **(5)**

b) Write a 'C' Program to print all Prime integers in between a given range. The Upper Limit and Lower Limit for that range are to be given by the user through keyboard. **(5)**

Q3 **a)** Write a Program in 'C' to find the Inverse of a 3X3 Matrix. **(5)**

b) Write a Program to input two 3X3 Matrix and multiply them. Display both input Matrix and resultant Matrix. Use separate function for input, multiplication and display. **(5)**

Q4 **a)** Write a program to find the Least Common Multiple and Highest Common Factor of two numbers. Use separate function for LCM and HCF calculations. **(5)**

b) Write a 'C' Program that takes a string as single parameter and returns the integer '1' if the string is "Palindrome", otherwise '0' should be returned. **(5)**

Q5 **a)** What do you mean by "Function Recursion"? Write a Program to find p^q for given values of 'p' and 'q' using function recursion. **(5)**

b) Write a 'C' Program to input a string and then return the Largest Word. **(5)**

Q6 **a)** Write a Program using Structure to enter the Name, Roll No. and Six Subjects marks for each student. Find the total and average marks of each student and also the average marks in each subject in a class of 30 students. **(5)**

b) Differentiate between "Function to Pointer" and "Pointer to Function". Explain each concept with suitable example. **(5)**

Q7 **a)** Write a Program in 'C' to create two text files. Provide user defined function that accepts the names of the above two files as arguments and return '1',if the number of characters are same in both files or else it will return '0' . **(5)**

b) Write a Program for the addition of two integers using Command Line Argument. **(5)**

Q8 **Write short notes on the following (Any Two):** **(5 x 2)**
a) Enumeration
b) Macro
c) Command line arguments
d) Self-referential structure