

**END-TERM EXAMINATION
FIRST SEMESTER [MCA] - DECEMBER 2005
PROBLEM SOLVING USING C**

**Paper Code: MCA-105
(Batch – 2004 & 2005)**

**Time: 3 Hours
Marks: 60**

Q. 1. (a) Give syntax and task performed by the following functions in C language :-
getch(), getche(), getchar(), fgetc()

(b) An OS automatically opens three files whenever a C program is executed. Which are these three files and how are the referenced?

(c) Give the meaning of the following format specifiers:-

%e %f %o %s %u %ld %14.5f

(d) What is Abstract Data Types and Derived Data Type? Differentiate between structure and union data type.

(e) What is placeholder? After the execution of “x = y = z = 6”, What will be the value of x, y and z? Clearly write your assumptions, if any.

Q. 2. (a) Write a program to convert a string of digits into corresponding number e.g. string “12345” should be converted into a number 12345 and so that it can be used in any mathematical expression.

(b) Write a function substr() that takes two strings as arguments and tests whether first argument is a substring of second or not?

Q. 3. Define a structure containing the following information: name, employee code, age, qualification (last only) and date of joining. You can assume appropriate data type for each of the field. Then write a program to append record in a file called “employee.txt”.

Q. 4. (a) What is the advantage of linked list over array? Give an example in which static data allocation is better than dynamic allocation.

(b) Read the following function code and give output when input is (4, 5)

```
Mystery (m, n)
{
if(m=0) return(n)
else return (m-n)
}
```

Q. 5. (a) Give syntax of fread() and fwrite() functions and explain the meaning of each parameters.

(b) Write a program to multiply two matrices. Make a provision in your program to test whether two matrices are compatible for multiplication.

Q. 6. (a) Explain with example, concept of parameters by passing and by reference and by value. Your example should emphasize on the advantages and disadvantages of both.

(b) Write a function to concatenate string2 to string1 and result remains in string1.

Q. 7. (a) Consider the variable: int A[10], x, *y, **z. Now determine valid statement from the following:-

y=A; z = &y; y=&A; A=y; z=A

(b) Differentiate “continue and break” statement and also “while and repeat until” statement

Q. 8. (a) Write a program to compute EMI (Equated Monthly Installment) for a loan amount P for a period D years at rate of interest R% per annum on reducing balance.

(b) Give the output of the following program

```
main()
{
int y = 0;
unsigned int x=0;
while (x!=0) {x<<1; y--}
printf(“The value of y is %d”, y);
```