



Name : .....  
Roll No. : .....  
Invigilator's Signature : .....

**CS/M.TECH(MCP/MTT)/SEM-3/CS-301/2011-12**

**2011**

**PRINCIPLES OF PROGRAMMING LANGUAGE**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**  
**( Objective Type Questions )**

1. Answer *all* the questions : 10 × 1 = 10
- i) Dot matrix is a type of
    - a) tape
    - b) printer
    - c) disk
    - d) bus.
  - ii) Fill in the blanks :  
The form of storage located in the CPU is called .....
  - State True / False :
  - iii) Most computer memories are volatile.
    - a) True
    - b) False.
  - iv) A unary expression consists of only operand with no operators.
    - a) True
    - b) False.



- v) Write the syntax of scanf in C programming language.
- vi) Find the error, if any, in the following sentence :  
`printf ("%d%d", &a, b);`
- vii) What is the return type of malloc( ) ?
- viii) What does the digit 5 signify in the following statement ?  
`arr [ 5 ] = 10;`
- ix) What do we use the following statement ?  
`for ( ; ; )`
- x) What is a null statement ?

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following 3 × 5 = 15

- 2. a) Differentiate between High level language and Assembly language.
- b) In hard disk assembly, what is the purpose of read and write heads ? 3 + 2
- 3. a) Explain the different types of softwares with suitable example.
- b) List the functions of operating system. 3 + 2
- 4. a) Define the different storage class in C language.
- b) Define ternary operator in C language with example. 3 + 2
- 5. a) What is the difference between getchar() and get() functions ?
- b) Differentiate between break and continue statement in C language with example. 2 + 3
- 6. a) Convert  $(F3B \cdot B2)_{16} \rightarrow (?)_8$
- b) Compute the sum of  $FFFF + FFFF$  ? 3 + 2



**GROUP - C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. a) Write an algorithm to find the g.c.d. of two numbers using recursive functions.  
b) Write a C program to convert into binary number from an inputted decimal number taken through keyboard.

7 + 8

8. a) Draw the flowchart to find the largest element of an array of a given size.  
b) Write a C programming language to print the product of two two-dimensional arrays.

7 + 8

9. a) Write a for statement to print the following sequences in C language :

1, 3, 9, 27, 81, 243 and - 4, - 2, 0 , 2 , 4.

- b) What is the output of the following code ?

```
i) int m = 0;
do
{
    if ( m > 10)
        continue;
    m = m + 10;
}
while ( m < 50 );
printf ("%d", m);
```

```
ii) main ()
{
    int m;
    for (m = 1; m < 5; m++)
        printf ("%d\n", (m%2)?m:m*2);
}
```

8 + 7



10. a) Write a C program to find the roots of a quadratic equation.
- b) Write a program in C language to swap two numbers without using third variable. 8 + 7
11. a) Find error, if any, in the following code segments :
- i) 

```
char str [10]
strncpy (str, "GOD", 3);
printf ("%s", str);
```
- ii) 

```
typedef struct product
{
    char name[10];
    float price;
} PRODUCT products[10];
```
- iii) 

```
If (x + y = z && y > 0)
printf(" ");
```
- b) Write a C program to print following :
- ```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```
- c) Write a C program to find the factorial of a number using recursion. 6 + 4 + 5

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