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Question Paper Code : 51008

B.E./B.Tech. DEGREE EXAMINATIONS, JANUARY 2012.

First Semester

GE 2112 – FUNDAMENTALS OF COMPUTING AND PROGRAMMING

(Common to all branches)

(Regulations 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are Mainframe computers? Give the name of any one Mainframe computer.

2. Find the octal equivalent of the number $(10111001100.1101011)_2$.

3. How are operating systems classified?

4. What is a web server?

5. Enlist the advantages of algorithm.

6. State the usage of Excel application software.

7. Write a 'C' program to implement the expression $((m+n)/p-m)*m)$, where m = 4, n = 6, p = 8.

8. What will be the outputs for the following program, when the value of i is 5 and 10?

    ```
    void main( )
    {
    int i ;
    scanf ("%d" , &i) ;
    if (i = 5)
    printf ("Five") ;
    }
    ```

9. What is the value of b[0] in the following program?

```
main( )
{
int a[5]= {1, 3, 6, 7, 0} ;
int *b;
b = &a[2];
}
```

10. What are the operators exclusively used with pointers?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Illustrate the process of addition and subtraction in 1s and 2s complement system with suitable examples. (8)

(ii) Explain the evolution of computers. (8)

Or

(b) (i) Explain the basic computer organization with suitable diagram. (8)

(ii) With examples illustrate the conversion of Decimal to Binary, Octal and Hexadecimal numbers. (8)

12. (a) (i) What are the steps involved in developing a software? Explain. (8)

(ii) Explain the functions of an Operating System. (8)

Or

(b) (i) What is an internet? List down some of the advantages and drawbacks of internet. (8)

(ii) Describe how does one get connected to internet. (8)

13. (a) (i) Write an algorithm to compute the factorial of a number n. (8)

(ii) Draw a flowchart to find the highest marks in a set of n marks. (8)

Or

(b) (i) Write the pseudocode to add two matrices. (8)

(ii) Briefly describe the usage of wordprocessor and spreadsheet application. (8)

14. (a) (i) Write the algorithm and C program to print the prime numbers lesser than 500. (10)

(ii) Describe the statements for decision making, branching and looping. (6)

Or

(b) (i) Explain briefly the formatted and unformatted I/O functions in 'C'. (8)

(ii) Write a 'C' program to evaluate the following series.

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \ldots\ldots\ldots + \frac{1}{n!} \ .$$ (8)

15. (a) (i) Write a 'C' program to check whether the given number is palindrome or not. (8)

(ii) Write a 'C' program to generate Fibonacci series upto 200. (8)

Or

(b) (i) Write a C program to find the factorial of a given number using recursion. (6)

(ii) Write a C program to accept records of 20 states using array of structures. The structure should contain name of the state and number of engineering colleges, medical colleges, management colleges, science colleges. Calculate and display the total colleges in each state and the state which is having the highest number of colleges. (10)