

Part III

**COMPUTER SCIENCE**

Maximum : 60 Scores

Time : 2 Hours

Cool-off time : 15 Minutes

- 
1. The method used in C++ to list symbolic constants is \_\_\_\_\_. (Score 1)
  2. Which OOP feature is connected with the term 'Transitive Nature'. (Score 1)
  3. "function call is replaced by function body". What kind of function is it? (Score 1)

4. struct stud

```
{  
    int clsno;  
    int name[20];  
    stud *p;  
};
```

- What kind of structure is this? (Score 1)
5. Which header file is mandatory in writing programs which uses files? (Score 1)
  6. What is the difference between a Bridge and a gateway? (Score 2)
  7. Name any 2 SQL aggregate function with example. (Score 2)
  8. Which Relational Algebra operator is represented by the symbol ' $\pi$ ' ? Describe the operator. (Score 2)
  9. What is a copy constructor? What is its use? (Score 2)

10. Abstract class Employee

```
{  
    int no;  
    char name[20];  
    char desig[20];  
};
```

- What effect may the keyword 'abstract' make on the class Employee? (Score 2)
11. Private and Protected members are hidden within the class. Then what is the difference between these two members? (Score 2)
  12. Identify the error in the following C++ statement and correct it.

```
int population=68000; (Score 2)
```

```

13. class employee
    {
        static char name[20];
    public:
        void getdata();
        void display();
    };
char employee::name[20];

employee x[10];

```

- a) How many copies of member functions of employee class are created?  
 b) How many copies of data members are created in memory? ( Score 2)

14. Choose the correct answer from B.

A	B
1. Argument is passed by reference	A. Destructor
2. Initialized with any dummy value	B. Copy constructor
3. Dynamic initialization	C. Default constructor
4. Clean-up work	D. Parameterized constructor

(Score 2)

15. Consider the following C++ function.

```

int recfact(int x)
{
    if (x==0)
        return 1;
    else
        return x*recfact(x-1);
}

```

What type of function is this? Explain? (Score 2)

16. Describe basic Logic Gates with symbol and truth table. (Score 3)  
 17. Describe the rules to find the Dual of a relation. (Score 3)  
 18. Define a system. In how many ways can it be classified? Explain. (Score 3)  
 19. What are the advantages of optical fibre? (Score 3)  
 20. Databases, DDL, DML and \_\_\_\_\_ are the components of DBMS. Explain the fourth component. (Score 3)  
 21. Which are the file mode constants? (Score 3)  
 22. Discuss the memory map of C++. (Score 4)

23. Write down various stages of System Development Life Cycle. Explain any 2. (Score 4)

24. Write a program to swap two numbers using a function which takes address of actual parameter. (Score 4)

25. Create a table stock with following details.

- |                  |   |  |
|------------------|---|--|
| 1. Item Number   | - | Four digit integer and it is the primary key                   |
| Item Name        | - | Maximum of 20 characters long and it should not empty          |
| Quantity         | - | Numeric and should be 0 by default                             |
| Unit Price       | - | decimal Number with two decimal points and it should not empty |
| Date of purchase | - | Date type  |

Write SQL commands for the following queries.

2. List the items sorted according to Item Name.
3. Display the total price of each item.
4. Increase the quantity of the item whose item number is 1005.
5. Create a view which shows item Name and quantity.

(Score 5)