

Model Question February 2012
COMPUTER SCIENCE

HSE II

Max Scores: 60
Time : 2 Hrs

1. What happens when the C++ statement `cout.put('a') ;` is executed? 1
2. How many bytes are required to store the string "Achu \s" ? 1
3. Write four different C++ statements to add 1 to a variable 'num'. 1
4. Replace the following conditional statement with 'if' statement in C++ 2
`Min=(a<b) ? (a<c? a:c) : (b<c? b:c);`
5. Define a structure to hold your house address(house name, street name, place, pincode). 2
6. Write the output of the following code in C++ 1

```
void main()
{
  int a, *ptr;
  ptr=&a;
  a=50;
  ptr++;
  cout<<*ptr;
}
```
7. In an ATM machine, the user will be given options to access their account details, withdraw money, deposit money etc. only. The background details are not shown to the user
 - a. Identify the OOP feature that you can correlate with the above situation 1
 - b. Justify your finding by stating its features. 2
8. Distinguish between HAVING and WHERE clause. 2
9. Consider the following statements
`6 + 9 = 15`
But
`'x' + 'yz' = 'xyz'`
 - a. Which OOP feature can you infer from the above? 1
 - b. Explain briefly about the feature. 2
10. Your school is planning to network computers in the Lab. As a computer science student you are asked to suggest two communication media. Justify your answer. 4
11. Database is preferred over traditional file system when large amount of data need to be handled by the programs. Justify the statement by pointing out the advantages of database. 5
12. Consider the following code fragment

```
class X
{
  int y;
  public:
  X()
{
  Y=30;
}
void display()
{
  cout<<y;
}
X(int a)
{
  Y=a;
}
X(X &t);
~X();
```

};

- (i) How do you call the function $-X()$? When is this invoked? 1
- (ii) In the above code consider $X()$ and $X(\text{int } a)$. Identify the concept represented here. Write statements to call these functions. 2
- (iii) Write a complete definition for $X(X \&t)$ function. 2
13. What is meant by memory leak? Suggest any two reasons for avoiding memory leak. 3
14. State and prove De Morgan's theorems. 3
15. Categorize the following 2
Walkie-Talkie, Telephone, Keyboard to CPU, TV broadcasting, Intercom
16. Identify the name given to the person who leads the system development team. Write any four qualities of him. 3
17. Write any two fact-finding techniques. In which stage of system development it is used? 3
18. What are the two methods for opening files? Write the syntax also. 2
19. Write and explain the usage of any three error handling functions in C++. 3
20. Compare any two guided communication channels used for long range communication. 3
21. Consider P and Q are two relations. Then explain the following 5
- $P \cup Q$
 - $P \cap Q$
 - $P - Q$
 - $Q - P$
 - $P \times Q$

Or

22. Create a table 'employee' with fields empcode, empname, dateOfRetirement, basic pay and total 5
- Insert data in all the fields(any 5 records)
 - Display the name and total salary of all the employees.
 - Display the details of employees according to the descending order of basic pay.
 - Display the details of employees whose total salary is 10,000 or above and 15,000 or below.

23. Consider the following code in C++

```
class A
{
.....
};
class B
{
.....
};
class C:public A, private B
{
.....
};
```

- (i) Identify the OOP feature in creating the class 'C' 1
- (ii) What type of the above feature is shown here? Also compare the visibility modes private and public. 2

Or

24. Compare the two data access methods in communication. 3
