The answers are marked in **bold and blue**.

Circle the **best** answer for the questions 1-15. These questions have only one and one possible correct answer. If you feel that, there is more than one possible answer, then please choose the **best** one. You will not receive any point for your answer, if you circle more than one answer for a given question. Each question carries one point.

1. A UNIX server is an example of the following server
   a) File Server
   b) Database server
   c) Web server
   d) Application server

2. Middleware (generally) has an application specific business logic built into it.
   a) True
   b) False

3. The “Database and Transaction” service is considered a **base** service for an operating system.
   a) True
   b) False

4. For which of the following reason, vendor independent standards are desired for a given product?
   a) Interoperability
   b) Redundancy
   c) Performance
   d) Scalability

5. LDAP is a
   a) Directory access protocol
   b) Directory service
   c) Directory framework
   d) Directory design specification

6. Password is an example of a following security concept
   a) Authorization
   b) **Authentication**
   c) Audit trail
   d) Non-Repudiation
7. A packet filtering firewall *mainly* operates at
   a) Application layer
   b) Transport layer
   c) **IP layer**
   d) Data link layer
   e) Physical layer

8. Is port information of a server required to open a socket to a server?
   a) **Yes**
   b) No

9. DML (Data Manipulation Language) issues an implicit commit to a database when executed.
   a) True
   b) **False**

10. ODBC drivers are platform independent
    a) True
    b) **False**

11. Which one of the following is true for Flat Transaction?
    a) They are longer
    b) **They follow ACID properties**
    c) They have compensating transactions built into them
    d) They do not need any locks to acquire

12. It is possible to carry out distributed transactions using two-phase commit protocol across databases made by different vendors.
    a) **True**
    b) False

13. TP monitor is a middleware
    a) **True**
    b) False

14. Which one of the following is not true for embedded SQL?
    a) It needs database to be available to compile
    b) It needs pre-compilers to compile
    c) **It cannot be used with stored procedures**
    d) It is database specific

15. Which one of the following is true for Java Bean?
    a) It is middleware
    b) **It is client side component framework**
c) It is simplified version of Enterprise Java Beans
d) It is Java’s effort to standardize the server side component

Answer the following questions (16-20) in brief. Each question carries two points.

16. What is an IDL and why is it designed to be used in CORBA programming?

17. What is an object adapter in CORBA and what does it do?

18. Explain the role of Security Manager in RMI programming (RMISecurityManager class).

19. Explain in brief the difference between valid and well-formed XML documents

20. Please provide two advantages of using TP monitor.