

University of M'sila,
Faculty of Mathematics & Computer Science (CS),
Department of CS.

Course: Distributed Information Systems (ISIL 3rd year)

Year: 2023-2024

Duration: 1:30

Final Exam

Q1. (8 points)

Select ONE choice from the following:

1. In RMI, the binder is used by:
 - a. The client only
 - b. The server only
 - c. Both of them**
 - d. None of the mentioned
2. The block which contains a set of statements where an exception can be handled is called:
 - a. throws
 - b. try
 - c. RemoteException
 - d. catch**
3. Hiding that a resource may be shared by several users is called:
 - a. Transparency**
 - b. Replication
 - c. Shared resource
 - d. Scalability
4. In distributed systems, services are generally specified through interfaces, which are often described in:
 - a. Interface, client, server
 - b. Interface Definition Language**
 - c. Interface Description Language
 - d. Interface Design Layer
5. It provides security services such as authentication, authorization, and encryption:
 - a. RMI
 - b. Software bus
 - c. Distributed object
 - d. CORBA**
6. It performs NO operations on HTTP requests and responses:
 - a. Proxy
 - b. Binder
 - c. Tunnel**
 - d. Cache

7. The HTTP connection is stateless. This means:
- The server and client are aware of each other only during a current request
 - The client and the browser can retain information between different request across the web pages
 - Both a and b
 - None of the mentioned
8. Java object that is hosted by a special server offering different ways for remote clients to invoke that object is:
- Object server
 - Remote object
 - Enterprise Bean
 - Transient object

Q2. (6 points)

Definitions:

- The client-server architecture is the most common distributed system architecture which decomposes the system into two major subsystems or logical processes:
 - Client: This is the first process that issues a request to the second process i.e. the server.
 - Server: This is the second process that receives the request, carries it out, and sends a reply to the client.
- Multi-tier architecture is a client-server architecture in which the functions such as presentation, application processing, and data management are physically separated.

By separating an application into tiers, developers obtain the option of changing or adding a specific layer, instead of reworking the entire application. Also, it provides better performance, flexible and reusable applications and reduces network traffic.

Q3. (6 points)

All correct answers are accepted. As an example:

Full Form:

(CORBA): Common Object Request Broker Architecture

(RMI): Remote Method Invocation

Usage:

(CORBA): Suitable for complex distributed systems with heterogeneous components

(RMI): Suitable for simpler distributed systems built entirely in Java

Security:

(CORBA): Provides security services such as authentication, authorization, and encryption.

(RMI): Provides security services such as authentication and encryption

