


Course No: ESGD4221
Course Title: Distributed System.
Date: 22/ 05 / 2013
No. of Questions:
Time: 2 H.
Using Calculator (Yes)

University of Palestine

Final Exam
2nd Term 2012/2013
Total Grade: 60

Instructor Name: Eng. M. Timraz
Student No.: _____
Student Name: _____
College Name: Engineering
Dep. / Specialist: Software
Using Dictionary (No)

First Question **No. of Branches (2)** **(30/60)**

Q1 B1: **(10/30)**

Put True or False in the specific table below.

- (1) Proxy is a layer between client and server that may provide data and/or application processing.
- (2) To invoke a method, its signature and parameters must be defined in a remote interface.
- (3) Binder must be provided to free up the space used by objects when they are no longer needed.
- (4) Remote interface and remote communications are normally invoked only in connection to the object with which they are associated.
- (5) Each segment carries a checksum. If the received segment doesn't match the checksum, it is dropped and will not retransmit.
- (6) According to the IP, packets may be dropped because of congestion or network error.
- (7) IDLs provide a common, non-ambiguous, definition of remote objects that can be used with any programming language.
- (8) Remote objects must have a way to be accessed through a remote reference.
- (9) Scalability is ensuring that when something goes wrong, the system can recover or bypass the fault rapidly without loss of information.
- (10) In N-Tier Configurations, Processing and data storage can occur on only one node.


<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>

Q1 B2 **(20/30)**

Choose the correct answer (a, b, c or d) and then put it in the specific table in the model answer note.

- (1)is an infrastructure enabling the invocation of a method on a remote object.
 - a. RBC.
 - b. Objects.
 - c. Attributes.
 - d. Java RMI.


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- (2)receives a request from the communication module, identifies the invoked method and directs the request to the corresponding method of the skeleton.
- The dispatcher.
 - The remote reference module.
 - The TCP/UDP Protocols.
 - The object requester.
- (3) means must be provided to free up the space used by objects when they are no longer needed.
- Skeleton.
 - CORBA.
 - Proxy.
 - Garbage collection.
- (4) The client sends a request to a server and crashes before the server replies.
- Server crashes.
 - Client crashes.
 - Request crashes.
 - Reply crashes.
- (5)to simplifies code, and avoids the need to write tests for all possible potential problems.
- Invocation Test.
 - Exceptions.
 - Initializes new objects.
 - Drop the invocation method.
- (6) An interface defines theof a set of methods.
- arguments.
 - parameters.
 - signatures.
 - return values.
- (7) Objects consist of:
- Information - a set of data.
 - Behavior - a set of methods.
 - a and b.
 - non of the above.
- (8) a common interface is shared between remote object and the reference obtained by the client.
- Proxy.
 - JVM.

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c. Protocol.

d. Remote interface.

(9) Distributed systems can be used in many different ways by persons or systems with different.....

a. Attributes.

b. Objectives.

c. a and b.

d. non of the above.

(10)High potential throughput can be defeated if the work is not distributed to make maximum use of potential because some of the system is idle.

a. Reliability.

b. Time Criticality.

c. Load balancing.

d. all of the above.

(11) Remote objects must have a way to be accessed through a

a. remote reference.

b. remote interface.

c. remote method invocation.

d. remote objects.

(12)defines the signatures of a set of methods, including arguments, argument types, return values and exceptions.

a. Proxy.

b. Remote object.

c. An interface.

d. Skeleton.

(13)formatted language used to describe a Web service's capabilities

a. IDL.

b. An XML.

c. WSDL.

d. SOAP.

(14) SOAP is a communication protocol doing all of the following except one.

a. communication between applications.


b. designed to communicate via Internet.

c. platform and language independent.

d. Network protocols independent.

(15)are loosely coupled thereby facilitating a distributed approach to application integration .

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- a. Middleware.
- b. Web services.
- c. Internet protocols.
- d. XML.

(16) Information about a service provider, including address, contact, and known identifiers.

- a. White pages.
- b. Green pages.
- c. Yellow pages.
- d. All of the above.

(17) It represents the service broker that enables service requesters to find a suitable service provider.

- a. REST.
- b. UDDI.
- c. Web services.
- d. All of the above.

(18) automatically detected and frees memory that is no longer in use.

- a. C#.
- b. WSDL.
- c. XML.
- d. Java.

(19) Inconfigurations, Processing and data storage can occur on only one node.


- a. Two tires.
- b. peer to peer.
- c. N-Tier.
- d. Noon of the above.

(20) transport protocol implemented on top of the Internet protocol (IP).

- a. TCP.
- b. UDP.
- c. Both a & b.
- d. Noon of the above.

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<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>

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Second Question	No. of Branches (2)	(10/60)
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<u>Q2 B1</u>	<u>(5/10)</u>
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There are a basic three metrics to measure the fault tolerance? What are the three metrics for the fault tolerance? Then describe them?

<u>Q2 B2</u>	<u>(5/10)</u>
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Illustrate the Architecture & Components for java RMI procedures by answering the following short questions?


- How to locate the remote object?

- How to obtain a reference to it?

- Who manages the parameter passing?

- What about result?

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Third Question **No. of Branches (10)** **(10/60)**

Define the major function for the following terms:

(1) UDDI & REST:

(2) business Entity & business Service

(3) Communication module:

(4) Binder:

(5) RMI registry:

(6) Actions:


(7) Events:

(8) Remote reference module:

(9) Dispatcher:

(10) Methode Signature:

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Fourth Question **Number of Branches (1)** **(10/60)**

Under this title, Architectural models are ways to organize the parts and structure the relationships between them.

(1) Design a distributed system of an election commission for palestinian government.

A palestinian election committee prepared for the elections, so it need to register all citizens, most of the 18 years older, it has established 20 centers for the registration of citizens, distributed as follows:

“4” major regestration centers in Gaza strip.

“10” major regestration centers in west bank.

“2” major regestration centers in Jerusalem.

It needs a system with the following comfortability:

- Must prevent the registration of a person more than once.
- Confirme of registration for each person in the place of residence.
- Prevent fraud and registration in more than one place.
- Each branch has an internet connection with bandwidth 265Kbps.

(2) You should consider the following with shortly answer for each point:

- 2.1 The type of the architectural model.
- 2.2 The type of client and server type.
- 2.3 The tire type you need to implement.
- 2.4 The number of proxy if you need and its contents.
- 2.5 The type of connection between branches and the bank.
- 2.6 The middleware you will use.
- 2.7 The type of protocols you will apply on the network.
- 2.8 The minimum bandwidth you need to the main branch.

(3) Draw a suggestion graph to implement the system above showing all DS parts you use or need.

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End of Questions