بِسُيهِ مِٱللَّهِ ٱلرَّحْمَزِ ٱلرَّحِيمِ

Course No: E	SGD4221
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**Course Title: Distributed System.** 

Date: 28/05/2011
No. of Questions:

Time: 2 H.

**Using Calculator (Yes)** 

#### **University of Palestine**



Final Exam 2<sup>nd</sup> Term 2010/2011 Total Grade: 60

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

**First Question** 

No. of Branches (2)

(20/60)

## **Q1 B1:** Put True or False in the specific table below.

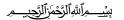
- (1) Proxy is a layer between client and server that may provide data and/or application processing.
- (2) Middleware and distributed applications have to be implemented on top of a network protocol.
- (3) TCP (Transport Control Protocol) and UDP (User Datagram Protocol) are both transport protocols implemented on top of the Internet protocol (IP).
- (4) Each segment carries a checksum. If the received segment doesn't match the checksum, it is dropped and will not retransmit.
- (5) According to the IP, packets may be dropped because of congestion or network error. Remote objects must have a way to be accessed through a remote reference.
- (6) Java manually detects and frees memory that is no longer in use.
- (7) Scalability is ensuring that when something goes wrong, the system can recover or bypass the fault rapidly without loss of information.
- (8) In DS Clients see only one system.
- (9) An application does not need to know what port to use to contact the Port-mapper.
- (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 (10/20)

# 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.
- (2) .....receives a request from the communication module, identifies the invoked method and directs the request to the corresponding method of the skeleton.
- a. The dispatcher.
- b. The remote reference module.
- c. The TCP/UDP Protocols.



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d. The object requester. (3) means must be they are no longer needed.	provided to free up the	space used by objects when
a. Skeleton.		
b. CORBA.		
c. Proxy.		
d. Garbage collection.		
(4) The client sends a request to a se	erver and crashes before	e the server replies.
a. Server crashes.		
b. Client crashes.		
c. Request crashes.		
d. Reply crashes.		
(5)to simplifies c	code, and avoids the nee	d to write tests for all possible
potential problems.		
a. Invocation Test.		
b. Exceptions.		
c. Initializes new objects.		
d. Drop the invocation method.		
(6) An interface defines the	of a set of metl	hods.
a. arguments.		
b. parameters.		
c. signatures.		
d. return values.		
(7) Objects consist of:		
a. Information - a set of data.		
b. Behavior - a set of methods.		
c. a and b.		
d. non of the above.		
(8) a common inter	rface is shared between	remote object and the reference
obtained by the client.		
a. Proxy.		
b. JVM.		
c. Protocol.		
d. Remote interface.		
(9) Distributed systems can be used	in many different ways	by persons or systems with
different		
a. Attributes.		

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Course T Date: 28/ No. of Qu Time: 2 H		buted Sys		Final 2 <sup>nd</sup> Term	e of Palesti Exam 2010/2011 Frade: 60	Stud Stud Coll Dep	lent No.: lent Name ege Name . / Speciali	: : Engineer ist: Softwa	ring
b. Objectives. c. a and b. d. non of the above. (10)									
1	2	3	4	5	6	7	8	9	10

**Second Question** 

No. of Branches (2)

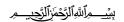
(10/60)

Q2 B1 (5/10)

Name the major parts (Who are the players?) which support the object "A" located in a client when it asks for a service from object "B" located in the server (using RMI). Also, Draw a graph to implement all components which do the above task.



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Q2 B2 In RMI Faults, A remote object sy Also errors can occur in the calling Suggest at least 2 ideas with explan	system.	•
Third Question  Define the major function for the (1) At-Least-Once Invocation Semi-		(20/60)
(2) At-Most-Once Invocation Sema	antics:	
(3) Exactly once semantics:		



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(4) Binder:		
(5) RMI registry:		
(6) Actions:		
(7) Events:		
(8) Peer to peer:		
(9) Middleware:		
(10) Signature:		

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**Using Calculator (Yes)** 

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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 for a social organization Working in the service of people wounded and the martyrs in Gaza, It has "4" branches in Gaza, Jabalea, Deralblah and Rafah.
- They interest is to collect data for the wounded and the martyrs and their families.
- They paid a salaries for them by cash transfer bank directly from a system connects all branches with the main branch in Gaza which link to the bank with financial system.
- Each branch has an internet connection with bandwidth 265Kbps.
- (2) You should consider the following:
  - 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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College Name: Engineering Dep. / Specialist: Software Using Dictionary (No)

### **End of Questions**