



**Uva Wellassa
University**

**Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science & Technology
1st Semester Examination March/April 2013
CST 324-2 Middleware Architecture**

Time Duration : Two Hours (02 hrs.)

Number of Questions : Three (03)

Answer **All** questions

1. In computer science, a Remote Procedure Call (RPC) is an inter-process communication that allows a computer program to cause a subroutine or procedure to execute in another address space (commonly on another computer on a shared network) without the programmer explicitly coding the details for this remote interaction. That is, the programmer writes essentially the same code whether the subroutine is local or remote to the executing program. When the software in question uses object-oriented principles, RPC is called remote invocation or remote method invocation (Wikipedia).
 - a. What are the basic steps in RPC?
 - b. Explain the Marshaling and Un-Marshaling process in a RPC?
 - c. Describe RPC Compilation process.
 - d. Describe RPC Failure Handling process.
 - e. What are the RPC execution semantics? **(50 mark)**

2. Enterprise Application Integration (EAI) is an integration framework composed of a collection of technologies and services which form a middleware to enable integration of systems and applications across the enterprise (Wikipedia).
 - a. Describe Enterprise Application Integration in your own words.
 - b. Describe how to use Service Oriented Architecture (SOA) to implement EAI. **(25 mark)**

3. There is an employee personal records managing system in the ABC company. They have two branches in Colombo and Galle. Both branches have their own database system. But these two systems cannot synchronize with each other because database structures are not similar. Therefore, they have to maintain the information separately. Finally they decided to synchronize these two systems using existing Middleware technologies.

By considering the following database structures, join these two-databases using a middleware layer.

Database system for Colombo branch is as follows.

Personal_data_table

First_Name	Second_Name	Address_one	Address_two	city
Amal	Perera	#45	Follower road	Colombo 07
Numwan	Dissanayake	#35	Main street	Nugegoda

Database system for Galle branch is as follows.

personal_data_table:

Name	Address
Dilshan Ekanayake	34, main street, Galle
Gihan Perera	66, Richmond hill road, Galle

(25 mark)