G 3542

M.C.A. DEGREE EXAMINATION, MAY/JUNE 2007.

Fourth Semester

MC 1754 — MIDDLEWARE TECHNOLOGIES

(Regulation 2005)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Enumerate the difference between general and service specific middleware.

2.   Draw the diagram that depicts the building block of client server.

3.   State the roles of EJB in eco system.

4.   When do you use EJB?

5.   Enumerate the difference between CMP and BMP.

6.   List any four exceptions raised in EJB.

7.   What is the role of IDL and IDL compiler in distributed system?

8.   CORBA ORB is a self describing system — Justify.

9.   Compare the functionalities of CORBA and DCOM.

10.   List the roles of .NET base class libraries.

PART B — (5 × 16 = 80 marks)

11.   (a)   (i)   Explain the working mechanism of MOM. State the difference
                  between RPC and MOM.   (10)

            (ii) Illustrate the three tier web server model and explain the sequence
                  of operations performed in the server side of the model.   (6)

Or

      (b)   How is RPC implemented in client server environment? Explain in detail
            the various issues involved while implementing with diagram.   (16)

12. (a) (i) With a neat sketch explain the EJB architecture specifying both client side and server side environment. (8)

    (ii) Describe the sequence of steps for deploying J2EE based EJB applications. (8)

Or

    (b) (i) Describe the functions of different types of client views available in EJB. (6)

    (ii) Explain the main steps employed for server-side and client side EJB development in detail. (10)

13. (a) (i) Compare and contrast stateful session beans with stateless session beans. (6)

    (ii) Explain the life cycle of entity bean in detail. (10)

Or

    (b) Consider an E-commerce application of "shopping cart" for purchasing things over the web. Implement the above application using EJB by considering the necessary issues involved. (16)

14. (a) (i) Explain the need and technologies used to implement an distributed system in detail. (8)

    (ii) Differentiate between dynamic invocation interface and static invocation interface. (3)

    (iii) How programmers access ORB functionality from their programming language? How to map the following OMG IDL into C, C++ languages?

    //OMG IDL

    Module first

    { Interface foo

    {

    Void operation(inout long param)

    raises (USER _ EXCEPTION)

    } ;

    } ; (5)

Or

    (b) (i) Discuss the issues involved in CORBA object model in detail. (8)

    (ii) Write a CORBA client application to say "hello" and explain how an ORB object is created and accessed to invoke the specified operation in your coding. (8)

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15. (a) How do you implement interfaces in COM? Explain the concept involved in it with diagram and example. (16)

Or

(b) (i) How does proxy and stub are generated in remote communication? Describe in detail how communication takes place with diagram. (8)

(ii) Draw the architecture of .NET and how does CLR execute the .NET source code? Explain the steps involved in it. (8)