ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2007

DISTRIBUTED & MOBILE COMPUTING SYSTEM

SEMESTER – 2

Time : 3 Hours] [Full Marks : 70

GROUP – A

(Objective Type Questions)

1. Answer any *five* questions very briefly : 5 × 2 = 10

   a) What is Blue-tooth ?

   b) What is LZCAP ?

   c) What is a thread ?

   d) What is mobile IP ?

   e) What is consistent state recording ?

   f) What is mutual exclusion ?

   g) What is the role of client-stub for RPC ?

   h) What is the difference between authentication and repudiation ?

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Describe different Blue-tooth architectures. 5

3. Explain the role of digital signature towards maintaining authenticity. 5

4. Designing a clock for a distributed system is crucial. Why ? 5

5. Compare the performances of CDMA over cell splitting. 5

6. What is access transparency ? How is it different from location transparency ? 2 + 3

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GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. 3 × 15 = 45

7. a) How does a Distributed Operating System differ from a Network Operating System ? What is a 'Middleware' and how does it help in implementing a Distributed System ?

   b) A distributed system can be modelled as a number of 'clients' that request services from 'servers'. Describe briefly this client-server model of a distributed system. Your answer should clearly explain the application layering and the multitiered nature of the client-server model. 6 + 9

8. a) What do you mean by the term 'Remote Procedure Call' ? How does it help in implementing a distributed system ?

   b) Describe how Remote Method Invocation works ? What are the advantages of Remote Method Invocation over RPC from the point of view of developers who use it to build distributed systems ? 6 + 9

9. a) How does a kernel thread differ from a user-level thread ? State the pros and cons of each type of thread.

   b) What do you mean by 'Code migration' as used in distributed systems literature ? How does code migration help in simplifying the design of a distributed system ?

   c) Briefly describe a procedure by which code migration can be implemented in heterogeneous systems. 5 + 6 + 4

10. a) What is name resolution and why is it important in a distributed system ?

b) The Internet Domain Name System (DNS) is one of the largest naming systems in use today. Describe how this system works.

c) What are 'Logical Clocks' ? Briefly describe a mechanism for synchronizing logical clocks. 3 + 7 + 5

11. a) Compare the different types of algorithms that can be use to achieve mutual exclusion in a distributed system. 6

b) Draw and explain the architecture of GPRS. 6 + 9