Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech(IT)/SEP. SUPPLE/SEM-7/IT-703D/2012

2012

DISTRIBUTED COMPUTING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

i) Which of the following algorithms works as asymmetric key cryptography ?

a) DES b) IDEA

c) RSA d) None of these.

ii) Loosely cupled system are referred to as

a) Parallel processing b) Distributed

c) Centralized d) None of these.

iii) Conditions for deadlock are mutual exclusion, hold & wait, no preemption, circular wait.

Deadlock occurs when

a) any one condition is satisfied

b) any two conditions are satisfied

c) any three conditions are satisfied

d) all conditions are satisfied.

iv) Digital signature does not provide

a) authentication

b) confidentiality

c) non-repudiation

d) data integrity.

v) Issues related to correctness in good message passing is

a) Atomicity

b) Ordered delivery

c) Survivability

d) all of these.

vi) Processes in distributed system normally communicate by using

a) shared data approach

b) message-passing approach

c) all of these

d) none of these.

vii) Methods of passive attacks are

a) browing & leaking

b) interfacing & masquerading

c) all of these

d) none of these.

viii) Granularity refers in distribution shared memory in terms of

a) block size

b) page size

c) virtual address space

d) logical address space.

ix) The main issues in building heterogeneous DSM are

a) data conversion & selection of block size

b) repalcement strategy & data caching

c) all of these

d) none of these.

x) Process Migration is advantageous as because

a) it reduces average response time

b) utilize resource effectively

c) reduce network traffic

d) all of these.

GROUP – B

(Short Answer Type Questions)

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

2. What are the different issues in distributed operating system ?

3. What is RPC ? What is stateless and stateful server ? 2 + 3

4. What is deadlock ? What are the necessary conditions for deadlock ? 3 + 2

5. What is load sharing ? What are the issues in designing load-sharing algorithm ?

6. What are the different types of potential attacks to computer system ? Describe.

7. Explain in which respect distributed shared memory is suitable or not suitable for client-server system.

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

8. a) What is distributed computing ?

   b) What are the different models in distributed computing ? Briefly describe.

   c) Why distributed computing system gaining popularity ?

   2 + 8 + 5

9. a) What is distributed shared memory ?

   b) What are the different design and implementation issues of DSM ?

c) What is synchronization ?

d) Describe clock synchronization. 1 + 5 + 1 + 8

10. a) What is process migration ?

b) What are the desirable features of good process migration mechanism ?

c) What are the desirable features of good distributed file system ? 1 + 8 + 6

11. a) What is Naming ?

b) What are the desirable features of a good naming system ?

c) What is human oriented and system oriented names ? Describe with diagram.

d) What is cryptography ?

e) What is symmetric and asymmetric key cryptography ?

1 + 5 + 5 + 2 + 2

12. Write short notes on any *three* of the following : 3 × 5

a) Lightweight RPC

b) Buffering

c) Load Balancing : Centralized vs. Distributed

d) Digital Signature

e) Multidatagram Messages

f) Workstation Server Model.