# CS/B.TECH(IT) (SUPPLE)/SEM-7/IT-703D/09
# DISTRIBUTED COMPUTING ( SEMESTER - 7 )




**1.** .....
*Signature of Invigilator*

**2.** .....
*Signature of the Officer-in-Charge*

***Reg. No.*** | | | | | | | | | | | | | | |

***Roll No. of the Candidate*** | | | | | | | | | | | | | | |

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# CS/B.TECH(IT) (SUPPLE)/SEM-7/IT-703D/09
## ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009
# DISTRIBUTED COMPUTING ( SEMESTER - 7 )

Time : 3 Hours ] [ Full Marks : 70

***INSTRUCTIONS TO THE CANDIDATES :***

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

**No additional sheets are to be used and no loose paper will be provided**

**FOR OFFICE USE / EVALUATION ONLY**

Marks Obtained

| | Group – A | | | | | | | | | | Group – B | | | Group – C | | | ***Total Marks*** | ***Examiner's Signature*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Question Number*** | | | | | | | | | | | | | | | | | | |
| ***Marks Obtained*** | | | | | | | | | | | | | | | | | | |

.....
**Head-Examiner/Co-Ordinator/Scrutineer**

**S-53055 (31/07)**

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# CS/B.TECH(IT) (SUPPLE)/SEM-7/IT-703D/09
# DISTRIBUTED COMPUTING
## SEMESTER - 7

Time : 3 Hours ] [ Full Marks : 70

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### GROUP – A

### ( Multiple Choice Type Questions )

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Processes in Distributed System normally communicate by using

a) shared data approach b) message-passing approach

c) all of these d) none of these. ☐

ii) Which is not the properties of the transaction ?

a) Atomicity b) Consistency

c) Flexibility d) Isolation. ☐

iii) Basic IPC mechanism in Distributed Systems is

a) message-passing approach b) shared data approach

c) both (a) and (b) d) none of these. ☐

iv) The main issues in building Heterogeneous DSM are

a) data conversion & selection of block size

b) replacement strategy & data caching

c) all of these

d) none of these. ☐

v) Fabrication attack occurs due to the

a) lack of integrity b) lack of authentication

c) lack of confidentiality d) none of these. ☐

vi) Condition 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. ☐

vii) Loosely coupled system are referred to as

a) Parallel Processing b) Distributed

c) Centralized d) None of these. ☐

viii) Phantom deadlock occurs in the distributed deadlock detection technique only when there is a

a) False path b) False knot

c) False cycle d) None of these. ☐

ix) According to the freezing time in process migration mechanism the total freezing and transfer-on-reference method for process address space transmission methods have

a) same freezing time

b) different freezing time

c) depends on process address space size

d) none of these. ☐

x) Example of Election Algorithm is

a) Bully algorithm b) Ring algorithm

c) both of these d) none of these. ☐

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

a) DES b) IDEA

c) RSA d) None of these. ☐

xii) Which one of the following is the communication protocol for RPCs ?

a) Request protocol

b) Request / Reply protocol

c) Request / Reply / Ack reply protocol

d) all of these. ☐



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## GROUP – B

### ( Short Answer Type Questions )

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

2. a) What are the advantages of Distributed Shared Memory ( DSM ) ? 3

   b) How shared memory approach is implemented in DSM ? 2

3. a) What are the major drawbacks of distributed processing ? 3

   b) Why is scalability an important feature in the design of a distributed system ? 2

4. a) Compare and contrast Network operating system and Distributed operating system. 3

   b) What are the important issues in designing distributed operating system ? 2

5. a) What is load sharing ? 2

   b) What are the issues in designing load-sharing algorithm ? 3

6. What is "Process thrashing" ? Give examples of two global scheduling algorithms that may lead to processor thrashing. 3 + 2

## GROUP – C

### ( Long Answer Type Questions )

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

7. a) What is Naming ? What are the desirable features of a good naming system ? 1 + 4

   b) Discuss important characteristics of human oriented and system oriented names. 3 + 3

   c) Distinguish between symmetric key and asymmetric key cryptography. 4

8. a) What is message passing system ? Describe the desirable features of good message passing system. 7

   b) What is Idempotency ? Give an example of an Idempotent routine. 2

   c) What do you mean by Remote Procedure Call ( RPC ) ? State the basic mechanism of RPC implementation. 6

9. a) Briefly describe the architecture of distributed shared memory system. 5

   b) Describe the desirable features of a good global scheduling algorithm. 6

   c) What is task assignment approach ? Define load balancing approach. 4



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10. a) Describe file accessing models in Distribute File System. 6

b) What do you mean by write-through scheme ? 3

c) Briefly describe the Chandy-Mishra-Haas probe based deadlock detection algorithm with a suitable example. 6

11. a) What are the communication protocols uses in Remote Procedure Call model ? 7

b) Briefly describe the process address schemes in general message passing model. 5

c) What do you mean by Cross–Domain Communication ? 3

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

a) Process Migration

b) Light weight RPC

c) Load balancing Policies

d) Lamport's Logical clock

e) Stateless server.

END

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