CS/B.TECH (CSE) (SUPPLE)/SEM-7/CS-704D/09
ADVANCED OPERATING SYSTEM (SEMESTER - 7)

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

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

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

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

CS/B.TECH (CSE) (SUPPLE)/SEM-7/CS-704D/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009
ADVANCED OPERATING SYSTEM (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

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Marks Obtained

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

.....

Head-Examiner/Co-Ordinator/Scrutineer

S-53050 (31/07)

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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) When the execution of the second process start before the first process complete, then the processes are called

a) serial b) concurrent

c) parallel d) none of these. ☐

ii) A situation where a process waits for a resource that is continuously available but never assigned to the process is called

a) Deadlock b) Starvation

c) Semaphore d) Process. ☐

iii) In distributed system several computers don't share

a) hard disc b) memory or clock

c) CPU d) none of these. ☐

iv) An example of non-token based algorithm is

a) Ricart-Agrawal b) Chandy-Lamport

c) Singhal d) All of these. ☐

v) The primary goal of distribued file system is

a) Network transparency b) Location transparency

c) Lamport transparency d) All of these. ☐

vi) Which deadlock model is used for Resource acquisition ?

a) Single-unit b) AND

c) OR d) AND-OR. ☐

vii) Phantom deadlock occurs in the distributed system only when there is

a) false path b) false knot

c) false cycle d) none of these. ☐

viii) In tightly coupled system, the memory is

a) shared b) distributed

c) centralized d) individual. ☐

ix) A prefix table contains

a) the destination network id

b) the hop count reach to the network

c) token

d) all of these. ☐

x) In which of the following technique proceses are transferred from one computer to another by distributed operation system ?

a) Distributed scheduling b) Data migration

c) Compatibility d) All of these. ☐

GROUP – B

(Short Answer Type Questions)

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

2. Explain the workstation-server model of distributed system with an example.

3. Explain the centralized approach to mutual exclusion in detail.

4. Explain the advantages of process migration.

5. Differentiate between the terms "location transparency" and "location independency".

6. Describe the general architecture of distributed shared memory.

GROUP – C

(Long Answer Type Questions)

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

7. a) What do you mean by a happened-before relation ? What conditions should a happened-before relation satisfy ? 1 + 3

   b) How can deadlocks be handled in a distributed system ? 3

   c) Explain the centralized approach to deadlock detection with an example. 8

8. a) Why are distributed operating systems gaining popularity ? 8

   b) Distinguish between the AND request model and OR request model of deadlocks. 4

   c) What are the differences between a distributed operating system and a network operating system ? 3

9. a) Compare the UMA and NUMA architectures. 4

   b) State and explain the various types of interconnection networks used in multiprocessor systems with diagrams. 9

   c) What do you mean by stateless and stateful servers ? 2

10. a) Give a comparative study between symmetric and asymmetric key cryptography. 5

    b) Define the Caesar cipher with an example. 3

    c) Explain the concept of digital signatures. 4

    d) What are the potential threats to any system ? 3

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

    a) SUN Network File System

    b) The Producer-Consumer Problem

    c) Recart-Agrawal Algorithm

    d) Deadlock Avoidance.

END