Hall Ticket No | | | | | | | | | | | Question Paper Code: BCS004

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech II Semester End Examinations (Supplementary) - January, 2018

Regulation: IARE–R16

DISTRIBUTED OPERATED SYSTEM

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain the Flynns taxonomy of parallel and distributed computer systems. **[7M]**
   (b) Explain five different classes of failures that can occur in RPC systems. **[7M]**
2. (a) Explain different kinds of transparency in a distributed system. **[7M]**
   (b) Differentiate between closed group communication with open group communication protocols. **[7M]**

UNIT – II

3. (a) Illustrate with an example how Lamport's algorithm synchronises the logical clocks in distributed systems. **[7M]**
   (b) Explain the concept of wait-die and wound-wait deadlock prevention algorithms to prevent distributed deadlock. **[7M]**
4. (a) Illustrate different phases of bully algorithm in electing a leader by taking an example. **[7M]**
   (b) Explain different steps in Chandy-Misra-Haas distributed deadlock detection algorithm. **[7M]**

UNIT – III

5. (a) Briefly explain different ways to implement a threads package. **[7M]**
   (b) What is naming transparency? Explain different ways of dealing with the shared files in a distributed system. **[7M]**
6. (a) Briefly discuss the advantages and disadvantages of usage of private disks in a workstation. **[7M]**
   (b) Explain various ways of doing caching in client memory. **[7M]**

UNIT – IV

7. (a) Explain different states of a cache block in caching. **[7M]**
   (b) Briefly discuss different classes of variables defined by Munin during software implementation of release consistency. **[7M]**

8. (a) Discuss different consistency models using synchronization operations and consistency models not using synchronization operations. **[7M]**

   (b) Explain different ownership location protocols using a central manager. **[7M]**

UNIT – V

9. (a) Discuss the five principle abstractions managed by the Mach microkernel. **[7M]**

   (b) Illustrate the working principle of copy-on-write in Mach microkernel-based operating system. **[7M]**

10. (a) Explain different process management primitives provided by Mach microkernel-based operating system. **[7M]**

    (b) List and Illustrate different principal message types that the kernel sends to memory managers. **[7M]**

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