C 27581

(2 pages)

Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2003

IT. 2K. 606-B/CS. 2K 606-B—DISTRIBUTED SYSTEMS

Time : Three Hours

Maximum : 100 Marks

Answer all *questions.*

Part A

1. (a) Explain the design principles for improving the performance.
   (b) What is a distributed operating system ? Explain.
   (c) Explain the advantages of process migration.
   (d) What are threads ? Explain.
   (e) Give a mechanism for implementing causal ordering.
   (f) Explain absolute and relative names.
   (g) Compare receiver-initiated and sender-initiated load sharing.
   (h) Explain the features supported by distributed file system.

(8 × 5 = 40 marks)

Part B

2. (A) (i) Why are distributed operating systems are more difficult to design than operating systems for centralized time-sharing systems ? Explain. (8 marks)

   (ii) Differentiate between Monolithic kernel and Micro kernel approaches for designing a distributed operating system. (7 marks)

Or

   (B) (i) Explain the different types of transparency. (7 marks)

   (ii) Why are distributed computing systems gaining popularity ? Explain. (8 marks)

3. (A) (i) Explain the process migration in heterogeneous systems. (8 marks)

   (ii) Explain the different message forwarding mechanisms. (7 marks)

Or

   (B) (i) Explain how client-server communication takes place in distributed systems. (8 marks)

   (ii) Explain the different models for organizing threads. (7 marks)

Turn over

4. (A) (i) Describe a suitable mechanism for handling correctness of the IPC protocols of a message passing system.

(8 marks)

(ii) Discuss the advantages and disadvantages of blocking and non-blacking types of IPC.

(7 marks)

Or

(B) (i) Explain what is meant by absolute ordering, consistent ordering and causal ordering of messages.

(8 marks)

(ii) Explain the terms : Name space, Name server, Name agent and name resolution.

(7 marks)

5. (A) (i) Explain the different file models. (7 marks)

(ii) Explain the components of a load distributing algorithm. (8 marks)

Or

(B) (i) Explain the three commonly used approaches for structuring the shared memory space of a DSM system.

(8 marks)

(ii) Explain the different consistency models. (7 marks)

[4 × 15 = 60 marks]