KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2008/2009

INSTITUTE OF OPEN LEARNING

EXAMINATION FOR THE DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY

SIT 411: DISTRIBUTED SYSTEMS

==========

DATE: WEDNESDAY 17TH FEBRUARY 2010 TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS

Answer question one and any other two question from question 2, 3, 4 and 5

QUESTION-ONE (30 MKS)

1. What is distributed System. (2 mks)
2. Explain any three challenges problems of designing distributed systems. (6 mks)
3. Why do we build distributed systems? (5 mks)
4. Explain the following terms (6 mks)
    a. Concurrency
    b. Replication
    c. Middleware
5. Briefly explain any three types of MIDDLEWARE. (3 mks)
6. Discuss the Remote Procedure Call . (4mks)

7. State the role of each of the following layers in supporting distributed systems. (4 mks)

    a. Application and services
    b. Middleware
    c. Operating systems
    d. Computer and network hardware

QUESTION-TWO (20 MKS)

1. Discuss any five types of transparency in distributed systems. (5mks)
2. Explain any THREE classes of consistency models. (6 mks)
3. Discuss the Remote Method Invocation Call. (5 mks)
4. With an aid of a diagram differentiate between client server models and peer to peer models. (4 mks)

QUESTION-THREE (20 MKS)

1. Discuss the two types of Consistency protocols. (8 mks)
2. Differentiate between permanent replicas and dynamic replication. (4 mks)
3. Differentiate between DCE RPC and SUN RPC. (4 mks)
4. Discuss the Bully algorithm and the Ring algorithm. (4 mks)

QUESTION-FOUR (20 MKS)

1. What are the classifications of software faults? (4 mks)
2. What are the file service types and names in distributed file system? (4 mks)
3. Explain the NFS protocols. (4 mks)
4. Discuss the following: (8 mks)

    a. Remote file system
    b. Andrew file system
    c. Network file system
    d. Internet file system

QUESTION-FIVE (20 MKS)

1. Differentiate between server caching and client caching. (4 mks)
2. Discuss the following (3 mks)

    a. Wide-mouth frog algorithm
    b. Diffie-Hellman

3. Differentiate between symmetric cryptography, public key cryptography and hybrid cryptosystems. (6 mks)
4. What is skey authentication? (2 mks)
5. Discuss the various firewall architectures. (4 mks)

6. What is visibroker 3.x? (1 mark)