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

Question Paper Code: 46204

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Sixth Semester

Computer Science and Engineering

14UCS604 - DISTRIBUTED SYSTEMS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The _____ is also a very large distributed system.

   (a) Internet (b) WWW (c) Web service (d) Server

2. which common characteristics can be used to assess distributed systems?

   (a) Resource Sharing (b) Concurrency
   (c) Scalability (d) All the above

3. TCP provides the abstraction of a _____ stream between pairs of processes.

   (a) two-way (b) single-way
   (c) multi-way (d) none of these

4. The send operation is non-blocking in the sending process. The receive operation can have blocking and non-blocking variants in

   (a) synchronous form of communication
   (b) Asynchronous form of communication
   (c) both (a) and (b)
   (d) none of these

5. In distributed systems, link and site failure is detected by,

   (a) Polling (b) Handshaking (c) Token passing (d) None of the mentioned

6. The contention for the usage of a hardware device is called as

(a) Structural hazard (b) Stalk

(c) Deadlock (d) None of these

7. _____demonstrated the feasibility of building a useful large-scale service that depends almost wholly on data and computers owned by ordinary Internet users.

(a) Napster (b) legacy (c) Global state (d) Transaction

8. _____the performance of any system designed to exploit a large number of computers depends upon the balanced distribution of workload across them.

(a) Global scalability (b) Load balancing

(c) dynamic host (d) functional requirements

9. If a collection of processes share a resource or collection of resources, then _____is required to prevent interference and ensure consistency when accessing the resources. This is the critical section problem.

(a) Concurrency Control (b) Transactions

(c) mutual exclusion (d) Deadlock

10. Abstraction of a single activity

(a) Process (b) Thread (c) Region (d) Program

PART - B (5 x 2 = 10 Marks)

11. Define distributed systems.

12. Define object interfaces.

13. List out the transparencies in file system.

14. What is logical clock?

15. Define Process migration.

PART - C (5 x 16 = 80 Marks)

16. (a) Describe how to compare and contrast cloud computing with more traditional client-server computing? What is novel about cloud computing as a concept? (16)

Or

(b) Evaluate the trends in distributed system. (16)

17. (a) (i) Discuss about System Models. (8)

(ii) Inscribe a example program how does UDP sends message to the server and gets a reply and also how UDP server repeatedly receives a request and sends it back to the client. (8)

Or

(b) (i) Discuss the invocation semantics that can be achieved when the request-reply protocol is implemented over a TCP/IP connection, which guarantees that data is delivered in the order sent, without loss or duplication. Take into account all of the conditions causing a connection to be broken. (8)

(ii) Request-Reply Protocol can be implemented Using TCP or UDP? Justify your answer with Example Program. (8)

18. (a) (i) Explain the main task of the Distributed algorithm which is used for locating nodes and objects. (8)

(ii) The routing process at any node *A* uses the information in its routing table *R* and leaf set *L* to handle each request from an application and each incoming message from another node. Form Algorithm for this Routing Process. (8)

Or

(b) (i) Draw the files service architecture and explain its operations. (8)

(ii) Write a case study for Andrew file system and draw a diagram how processes are distributed system. (8)

19. (a) Compose the followings: (i) Clocks (ii) Events (iii) Process States (iv) UTC. (16)

Or

(b) (i) Discuss in brief about Clocks, Events and Process states. (8)

(ii) Give the clear explanation for Global States in Distributed Systems. (8)

20. (a) Explain about distributed shared memory with neat sketch. Also discuss its issues in design and implementation. (16)

Or

(b) (i) Summarize the features of load balancer in the view of vendor specific. (8)

(ii) Write short notes on resource management. (8)