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

Question Paper Code: 46204

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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. It acts as Applets are a potential security threat to the local resources in the destination computer?

   (a) Mobile codes (b) Mobile agents (c) Thin clients (d) Platform

3. The java API for _____ in the internet provides both datagram and stream communication.

   (a) Group communication (b) Client-Server communication
   (c) Interprocess Communication (d) Platform

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. _____represent a paradigm for the construction of distributed system and application in which data and computational resources or contributed.

(a) Group communication (b) Distributed file system
(c) peer-to-peer system (d) Client-server communication

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. Process Management contains

(a) Platform description (b) IP
(c) Memory management (d) RPC

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. An algorithm for choosing a unique process to play a particular role is called an_____ algorithm.

(a) election (b) ring based algorithm (c) bully (d) replication

PART - B (5 x 2 = 10 Marks)

11. Define distributed systems..

12. Duplicate the terms: Jitter and Clock Drift rate.

13. What are Naming Services in Distributed System?

14. Identify the meaning of Election and Event in Network terminologies?

15. What do you mean by Non-preemptive process migration?

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Converse about the Trends of distributed process. (8)

(ii) Use the World Wide Web as an example to illustrate the concept of resource sharing, client and server. What are the advantages and disadvantages of HTML, URLs as core technologies for information browsing? (8)

Or

(b) (i) List out the common characteristics used to access the Distributed Systems. (8)

(ii) Illuminate the challenges in Distributed Systems. (8)

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) Elucidate in detail about Process Management. (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)