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

## Question Paper Code: 46204

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 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. _____ is the harnessing of many small, cheap computational devices that are present in users physical environments, including the home, office and even natural settings.

   (a) mobile computing (b) Ubiquitous computing
   (c) both (a) and (b) (d) none of these

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

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

6. Internet provides _____ for remote login.,

(a) Telnet (b) Http (c) Ftp (d) RPC

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. Region can be shared in

(a) Libraries (b) Kernel
(c) Shared data and communication (d) All the above

10. Abstraction of a single activity

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

PART - B (5 x 2 = 10 Marks)

11. Define Unmarshalling.

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

13. What are Naming Services in Distributed 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) (i) List out the common characteristics used to access the Distributed Systems. (8)

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

17.(a) (i) What is RMI? How it is implemented? Write notes on JAVA RMI. (8)

(ii) What is meant by Publish-subscribe systems? Write short notes on it. (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) Define Peer to Peer systems. Explain in detail the working of Peer to Peer Systems. (16)

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) Distinguish and examine the process of active and passive replication model. (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, how process migration is implemented in heterogeneous system? (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)