Reg. No. :

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**Question Paper Code : 40914**

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

Sixth Semester

Computer Science and Engineering

CS 6601 – DISTRIBUTED SYSTEMS

(Common to Information Technology)

(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. Write down the principles of distributed systems.
2. State the objectives of resource sharing model.
3. Identify the two significant factors affecting interacting process in a distributed system.
4. List out the design issues of Remote Procedure Call (RPC).
5. What are the characteristics of peer-to-peer system ?
6. Label the different forms of transparency in file services.
7. Define the terms : clock skew and clock drift.
8. Mention some motivations for replication.
9. Write the uses of threads.
10. List out the desirable features of global scheduling algorithm.

PART – B (5×13=65 Marks)

11. a) i) Categorize the application areas of distributed systems. (7)

ii) Summarize the recent trends in distributed systems. (6)

(OR)

b) Consider a distributed system environment of the prevailing WWW and discuss the challenges meeting out sharing of resources. (13)

12. a) Compare the various types of system models in distributed environment. (13)

(OR)

b) i) List and explain the parts of a distributed object model. (7)

ii) Give a note on characteristics of group communication. (6)

13. a) i) Give the functional and non-functional requirements of peer-to peer middleware. (7)

ii) Specify the benefits of overlays routing over traditional multitoning and intelligent routing. (6)

(OR)

b) i) Explain the function of File Service Architecture. (7)

ii) Briefly describe about name space implementation. (6)

14. a) i) Generate Chandy and Lamport's snapshot algorithm for determining global states of distributed systems. (7)

ii) Outline the importance of nested transactions with an example. (6)

(OR)

b) i) Why do we go for optimistic concurrency control ? Explain. (7)

ii) Briefly explain the operation of two-phase commit protocol. (6)

15. a) Discuss the implementation of process migration with an example. (13)

(OR)

b) Tabulate the comparison of various load-balancing approaches used in distributed environment. (13)

PART – C (1×15=15 Marks)

16. a) Explain the Pastry's routing algorithm. Illustrate with an example. (15)

(OR)

b) With a simple case study, explain the concept of distributed deadlocks. (15)