

INSTITUTE OF AERONAUTICAL ENGINEERING

(AUTONOMOUS)

Dundigal, Hyderabad -500 043

COMPUTER SCIENCE AND ENGINEERING

ASSIGNMENT QUESTIONS 2017 - 2018

| Course Name | : | DISTRIBUTED SYSTEMS | |
|----------------|---|--|--|
| Course Code | : | A60521 | |
| Class | : | III B. Tech II Semester | |
| Branch | : | Computer Science and Engineering | |
| Year | : | 2017-2018 | |
| Course Faculty | : | Mr. RM Noorullah, Mr. N V Krishna Rao, Associate Professor, CSE. | |
| | | Mr. Ch Srikanth, Mr. Rakesh, Assistant Professor, CSE. | |

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

ASSIGNMENT – I & II

| S. No | Question | Blooms Taxonomy Level | Program Outcome | | | |
|----------|--|-----------------------------|--------------------|--|--|--|
| UNIT – I | | | | | | |
| 1 | Illustrate with an example how resources are shared in the distributed systems and explain how it is not possible in the centralized systems? | Understand | 5 | | | |
| 2 | Describe features of the distributed systems and also examples of the distributed systems? | Understand | 1 | | | |
| 3 | Describe the advantages and disadvantages of the HTML,URL &HTTP as core technologies for information browsing? | Understand | 2 | | | |
| 4 | List the three main components of the URL, stating how their boundaries are denoted and illustrating each one from your example? | Remember | 3 | | | |
| 5 | Explain how events are ordering in an distributed systems and list all the types of an fundamental model ? | Remember | 5 | | | |
| 6 | Differentiate between buffering and caching? | Understand | 5 | | | |
| 7 | Illustrate the client-server architecture of one or more major internet applications? | Understand | 5 | | | |
| 8 | Explain how events are ordering in real with a neat sketch? | Remember | 5 | | | |
| 9 | Demonstrate the design requirements for distributed architectures? | Understand | 5 | | | |
| 10 | Differentiate interaction model, security model, failure model? | Understand | 5 | | | |

| S. No | No Question | | Program Outcome | | | | |
|-----------|--|------------|--------------------|--|--|--|--|
| UNIT - II | | | | | | | |
| 1 | Explain Network Time Protocol in detail? | Remember | 8 | | | | |
| 2 | Explain distributed mutual exclusion in detail? | Remember | 7 | | | | |
| 3 | Explain how election is done when any particular system crashes? | Remember | 6 | | | | |
| 4 | Discuss in detail about consensus and related problems in coordination and agreement? | Understand | 6 | | | | |
| 5 | Briefly discuss the types of the election algorithms with a neat sketch? | Understand | 2 | | | | |
| 6 | Differentiate failure assumptions and failure detectors? | Understand | 2 | | | | |
| 7 | Explain why computer clock synchronization is necessary? Describe the design requirements for a system to synchronize the clocks in distributed systems? | Remember | 4 | | | | |
| 8 | Explain a solution to reliable, totally ordered multicast in a synchronous system, using a reliable multicast and a solution to the consensus problems? | Remember | 4 | | | | |
| 9 | Discuss how it is possible to compensate for clock drift between synchronization points by observing the drift rate over time? | Understand | 4 | | | | |
| 10 | Explain possibly Θ -and evaluating definitely Θ in distributed debugging process? | Remember | 4 | | | | |
| | UNIT - III | | | | | | |
| 1 | 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? | Understand | 8 | | | | |
| 2 | Explain how to use the java reflection to construct a generic dispatcher. Give java code for a dispatcher whose signature is: | Remember | 9 | | | | |
| 3 | Fublic void dispatch(object target, amethod, byte[jargs) | Remember | 7 | | | | |
| 4 | Define event and notifications and explain simple dealing room | | 7 | | | | |
| | system? | Remember | 7 | | | | |
| 5 | Explain the two alternative approaches in the data representation and marshalling? | Remember | 7 | | | | |
| | | | | | | | |
| 6 | Define he interface to the election service in the CORBA IDL, and JAVA RMI. Note that CORBA IDL provides type long for 32-bit integers. Compare the methods in the two languages for specifying input and output arguments? | Remember | 7 | | | | |
| 7 | Describe the design implementation of java RMI? | Understand | 7 | | | | |
| 8 | Describe events and its types and explain notifications in the remote invocation? | Understand | 7 | | | | |
| 9 | Explain distributed object model and also discuss the design issues of RMI? | Remember | 7 | | | | |
| 10 | Describe events and its types and explain notifications in the remote invocation? | Understand | 7 | | | | |
| UNIT – IV | | | | | | | |
| 1 | Discuss about global name service in detail? | Understand | 9 | | | | |
| 2 | Discuss in detail about Munin? | Understand | 9 | | | | |

| S. No | Question | Blooms Taxonomy Level | Program Outcome |
|-------|---|-----------------------------|--------------------|
| 3 | Write a note on all consistency models? | Understand | 7 |
| 4 | Explain sequential consistency and Ivy in detail? | Remember | 8 |
| 5 | Describe the X.500 directory service in detail? | Understand | 8 |
| 6 | Explain the design and implementation issues of distributed shared memory? | Remember | 10 |
| 7 | Explain sun network file system? | Remember | 8 |
| 8 | Describe basic distributed file system and storage systems and their properties? | Understand | 9 |
| 9 | Explain the implementation of the Andrew file systems? | Remember | 10 |
| 10 | Explain the characteristics and distributed file system requirements? | Remember | 9 |
| | UNIT - V | | |
| 1 | Explain why executions are always strict, even if read locks are released after the last operation of a transaction but before its commitments? | Remember | 12 |
| 2 | Explain how the two-phase commit protocol for nested transactions ensures that if the top-level transaction commits, all the right descendents are committed or aborted? | Remember | 12 |
| 3 | Explain with an example how two transactions are interleaved which are serially equivalent at each server but is not serially equivalent globally? | Remember | 11 |
| 5 | Explain transactions and their properties in detail? | Remember | 11 |
| 6 | Write a brief note on locks and its types? | Understand | 11 |
| 7 | Explain transactions and their properties in detail? | Understand | 11 |
| 8 | Write a brief note on nested transactions? | Understand | 12 |
| 9 | Differentiate all the types of the concurrency control mechanisms? | Understand | 12 |
| 10 | Explain how locks are released and acquired with a neat example? | Remember | 12 |
| 11 | Differentiate all the types of the concurrency control mechanisms? | Understand | 12 |
| 12 | Define deadlock? And explain how deadlocks are occurred and recovered in the distributed systems? | Remember | 11 |

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