

(2012 batch onwards)

G 601.6

Reg. No.

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**St Aloysius College (Autonomous)
Mangaluru**

**B.C.A. Semester VI – Degree Examination
April - 2017**

DISTRIBUTED COMPUTING

Time: 3 hrs.

Max Marks: 100

PART – A

1. Answer any **TEN** of the following:

(10x2=20)

- a) List the components of DDBMS.
- b) What is Global schema?
- c) Define the term fully reduced relation.
- d) What is distribution transparency?
- e) What is the drawback of two phase commit protocol?
- f) What is the purpose of Lamport’s logical clocks?
- g) Define synchronization delay and response time.
- h) Differentiate authenticated and non authenticated messages.
- i) List the control organization for distributed deadlock detection.
- j) Mention the two classifications for mutual exclusion algorithm.
- k) Differentiate physical clocks with logical clocks.
- l) Define the projection operation.



PART – B

Answer any **FOUR** of the following:

(4x5=20)

- 2. List and explain advantages of distributed system over traditional time sharing systems.
- 3. Explain primary site locking scheme for concurrency control in DDBMS.
- 4. Which are the three categories of distributed systems? Explain.
- 5. List and explain any two agreement problems in distributed system.
- 6. Explain Mensce-Muntz algorithm for distributed mutual exclusion.
- 7. Explain various strategies to handle deadlock in distributed systems.

PART – C

Answer any **FOUR** full questions of the following:

(4x15=60)

- 8.a) Explain any four issues in distributed operating system.
- b) Explain semi-join operation with an example.

(8)

(7)

Contd...2

- 9.a) Write a note on: (8)
 - i) Parallelism in distributed query processing
 - ii) Time stamp based concurrency control.
- b) State and explain Lamport's algorithm for distributed mutual exclusion. (7)

- 10.a) Write and explain four factors used to measure the performance of mutual exclusion algorithm. (8)
- b) Explain voting protocol algorithm. (7)

- 11.a) Explain two phase commit protocol algorithm. (8)
- b) List and explain the main issues in designing a transparent RPC. (7)

- 12.a) Explain two phase site locking scheme for concurrency control in DDBMS with an example. (8)
- b) Explain the different features of distributed database with respect to centralized databases. (7)

- 13.a) Write a note on: (8)
 - i) packet switching
 - ii) circuit switching
- b) Explain the path pushing algorithm. (7)

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DISTRIBUTED COMPUTING

Time: 3 hrs.

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PART – A

1. Answer any **TEN** of the following:

(10x2=20)

- What is distributed computing?
- What is a critical section?
- Differentiate authentication with authorization.
- Define deadlock situation.
- Define the terms
 - Synchronization delay
 - Response time
- What is distribution transparency?
- List the issues in deadlock situation.
- Name the three categories of agreement problems in distributed systems.
 - Mention one drawback of two phase commit protocol.
- What is meant by "happened before" relation?
- What is fault tolerance?
- Define selection operation.



PART – B

Answer any **FOUR** of the following:

(4x5=20)

- Explain any two categories of distributed system.
- Explain the primary site locking schema for concurrency control in DDBMS.
- What is semi join? Explain the semi join operation with example.
- Explain Ho-Ramamoorthy one phase algorithm for centralized deadlock detection.
- Explain the completely centralized deadlock detection algorithm.
- Write a note on the limitations of Lamport's logical clock.

PART – C

Answer any **FOUR** full questions of the following:

(4x15=60)

- Explain any four issues in the distributed operating system. (8)
- Explain parallelism in distributed query processing. (7)

Contd...2

- 9.a) Explain the reference architecture of distributed databases with a neat diagram. (8)
- b) Explain the issues in deadlock detection and resolution in a distributed system. (7)
- 10.a) Write a note on (8)
- i) Byzantine agreement problem.
- ii) The interactive consistency problem
- b) Explain Lamport's algorithm for distributed mutual exclusion. (7)
- 11.a) Write a note on: (8)
- i) LAN topologies ii) Remote procedure calls
- b) Explain the two phases commit protocol. (7)
- 12.a) Explain the static voting protocol. (8)
- b) Which are the different ways of designing fault tolerance in distributed systems? Explain. (7)
- 13.a) Explain the path pushing algorithm for distributed deadlock detection. (8)
- b) Explain the ISO OSI reference model. (7)

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St Aloysius College (Autonomous)
Mangaluru
B.C.A. Semester VI – Degree Examination
April - 2017

LINUX ADMINISTRATION

Time: 3 Hours

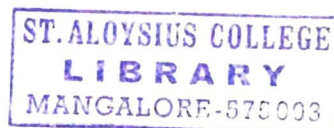
Max. Marks: 100

PART - A

Answer any TEN of the following:

(10x2=20)

1. a) What is Linux?
- b) Mention the purpose of swap space.
- c) Differentiate (.) and `.` directory entries.
- d) What is demand paging?
- e) Mention the command used to display working directory.
- f) Expand the terms KDE and GNOME.
- g) In Linux, how do you display file permissions.
- h) Name any two web browser in Linux.
- i) Define client server architecture in Linux.
- j) What is P2P networking?
- k) Mention the use of redirection operator `<` and `>`.
- l) Name the different wildcard characters used in linux.



PART - B

Answer any FOUR of the following:

(4x5=20)

2. Explain any five features of Linux.
3. Write a note on Linux kernel.
4. What are pathnames? Explain two types of pathnames with examples.
5. Write a note on X window system.
6. What are the powers of an administrator in Linux?
7. Write a shell program to display `n` even numbers.

PART - C

Answer any FOUR full questions of the following:

(4x15=60)

8. a) Give the difference between RPM based distributions and DEB based distributions with example. (5)
- b) How do you customize GNOME panels, menus and desktop? (10)
9. a) Write a note on access permissions in Linux system. (5)
- b) Explain the different internet applications in Linux. (10)
10. a) Write a note on Boot-Up manager. (4)
- b) Write the utilities used for displaying user and system information. (6)

Contd...2

- c) Write a shell program to accept an integer, find its reverse and sum of its individual digits. (5)
11. a) How to use logical operators in Linux, explain with an example. (4)
b) With a neat diagram, explain the typical structure of website in Linux system. (6)
c) What are the advantages of using Linux? (5)
12. a) Explain the steps to customize k desktop environment. (10)
b) Mention and explain any five basic utilities in Linux. (5)
13. a) Write a note on networking fundamentals. (5)
b) How do you manage groups and users in Linux? (4)
c) What is free and open source software? List the three characteristics of free software. (6)

(2012 – 2016 batch)

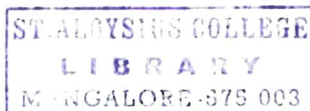
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St Aloysius College (Autonomous)**Mangaluru****B.C.A. Semester VI – Degree Examination****April – 2018****LINUX ADMINISTRATION****Time: 3 hrs.****Max Marks: 100****PART-A****1. Answer any TEN of the following:****(10x2=20)**

- a) What is Linux?
- b) Write a note on two types of Linux distribution.
- c) What is demand paging?
- d) Mention the command used to display working directory.
- e) List the information displayed by the command 'ls -l'.
- f) Differentiate control operators '&&' and '||'.
- g) What is P2P networking?
- h) Write the steps to settime and date of a system?
- i) What is a live USB?
- j) Why is the Linux file system referred to as hierarchical?
- k) What is an utility program?
- l) What is the use of 'expr' command in Linux?

**PART-B****Answer any FOUR of the following:****(4x5=20)**

2. Write the history of Linux.
3. Write a short note on Linux kernel.
4. What are pathnames? Explain any two types of pathnames with examples?
5. Discuss the privileges of Linux administrator
6. Explain case statement with syntax and example.
7. Write the utilities used for displaying user and system administration.

Contd...2

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PART-C**Answer any FOUR of the following:****(4x15=60)**

- 8.a) Explain Linux features. **(10)**
 b) Write a note on graphical user interface. **(5)**
- 9.a) Write a note on installing packages. **(6)**
 b) What is link? Write about hard link, symbolic link in Linux. **(5)**
 c) How to alter the permissions of a file in Linux. **(4)**
- 10.a) Explain the use of redirection input and output with example. **(7)**
 b) Explain typical structure of website in Linux system with a neat diagram. **(6)**
 c) What is the difference between multiuser and a multitasking system? **(2)**
- 11.a) Write a shell program to display 'n' Fibonacci numbers. **(6)**
 b) Explain the RPM based distributions. **(6)**
 c) Write a note on Linux opportunities. **(3)**
- 12.a) Write a note on chmod command. **(5)**
 b) Mention and explain any three file compressing and archiving commands. **(6)**
 c) Write a shell program to calculate simple interest. **(4)**
- 13.a) What is free and open source software? List three characteristics of free software. **(6)**
 b) Write the steps to set up network connections in Linux. **(5)**
 c) Write a note on Boot-Up manager. **(4)**

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St Aloysius College (Autonomous)

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B.C.A. Semester VI – Degree Examination

April - 2017

MOBILE COMMUNICATION

Time: 3 hrs.

Max Marks: 100

PART – A

1. Answer any **TEN** of the following:

(10x2=20)

- Define the term mobile agent.
- State the pros and cons of GSM.
- List the advantages of Infra-red technology.
- What is SIM?
- What is polling?
- What are the possible locations of tunnel end points in mobile IP?
- Mention the primary goal of WAP.
- What are the power saving mechanism in Bluetooth?
- Which TDMA scheme is suitable for satellite systems?
- List the features of DECT.
- Differentiate between soft and hard handover.
- Define adhoc wireless network.



PART – B

Answer any **FOUR** of the following:

(4x5=20)

- Explain the goals of mobile IP.
- What is transaction oriented TCP? Explain.
- Write a note on Digital Video Broadcasting.
- Write a short note on Fast transmit/Fast recovery.
- Compare and contrast SDMA and FDMA.
- Write a short note on transmission/timeout freezing.

PART – C

Answer any **FOUR** full questions of the following:

(4x15=60)

- Explain the various schemes used for medium access control with TDM access. (8)
- Describe the architecture of Bluetooth. (7)

Contd...2

- 9.a) Explain the reference model and protocol entities of WATM. (8)
b) Briefly explain the DHCP client initialization protocol. (7)
- 10.a) Briefly discuss about agent discovery in mobile IP. (8)
b) Explain snooping TCP. Write its advantages and disadvantages. (7)
- 11.a) Briefly explain the wireless application environment. (8)
b) Explain the protocol architecture of DECT. (7)
- 12.a) Explain the basic functions performed by location management. (8)
b) What is traditional TCP? Explain the improvements made in classical TCP. (7)
- 13.a) Describe mobile adhoc network in detail. (8)
b) Explain the features and services of GSM. (7)

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MOBILE COMMUNICATION

Time: 3 hrs.

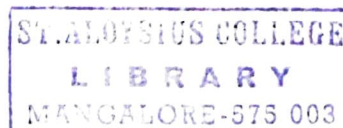
Max Marks: 100

PART-A

1. Answer any TEN of the following:

(10x2=20)

- What is prerequisite for applying FDMA?
- What is IMEI?
- What are the types of satellite orbits?
- What do you mean by ad-hoc network?
- What is polling?
- Give any two reasons for having wireless ATM.
- What is care-of-address?
- What advantages does the use of IPv6 offer for mobility?
- What is the need for wireless markup language?
- List the goals of mobile TCP?
- What do you mean by selective retransmission?
- What is freezing?



PART-B

Answer any FOUR of the following:

(4x5=20)

- How does near/far effect influence TDMA systems?
- Briefly explain handover scenarios in GSM.
- What are the advantages and disadvantages of radio waves?
- Explain the structure of piconet with a neat diagram.
- Explain mobile IP packet delivery.
- Write a short note on transmission/timeout freezing.

Contd...2

PART-C

Answer any FOUR of the following:

(4x15=60)

- 8.a) Explain functional architecture of GSM. (8)
- b) Describe mobile quality of service. (7)

- 9.a) What are the advantages and disadvantages of WLAN. (8)
- b) Write a short note on reverse tunneling (7)

- 10.a) Write a note on IPV₆. (8)
- b) Explain the mechanism that influence the efficiency of TCP in a mobile environment. (7)

- 11.a) Describe indirect TCP and snooping TCP and compare them. (8)
- b) Explain DECT system architecture. (7)

- 12.a) Compare and contrast infrastructure-based networks and ad-hoc networks. (8)
- b) Describe the logical architecture for wireless telephony application. (7)

- 13.a) Describe agent discovery, registration and encapsulation in mobile IP. (8)
- b) Explain types of handover in satellite systems. (7)
