(2012 – 2016 batch)

G 601.6 Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester VI – Degree Examination

April – 2019

DISTRIBUTED COMPUTING

Time: 3 hrs. Max Marks: 100

PART–A

1. Answer any TEN of the following: (10x2=20)

a) Differentiate physical clocks and logical clocks.

b) Mention any two drawbacks of two phase commit protocol.

c) Name the different types of processor failure in distributed systems.

d) Define projection operation.

e) What do you mean by global schema?

f) Differentiate between synchronous and asynchronous computations.

g) What do you mean by false deadlocks?

h) What are the methods of resolution of deadlocks in distributed system?

i) What are two classifications of mutual exclusion algorithm?

j) What are the components of DDBMS?

k) Mention any two advantages of distributed computing systems.

l) Define distributed transparency.

PART–B

Answer any FOUR of the following: (4x5=20)

2. Explain the metrics used to measure the performance of mutual exclusion algorithm.

3. Write semi-join operation with suitable example.

4. Explain primary site locking schema for concurrency control in DDBMS.

5. Explain the completely centralized deadlock detection algorithm.

6. Explain i) Horizontal fragmentation ii) Vertical fragmentation.

7. Explain Menasce-Munt'z algorithm for distributed mutual exclusion.

Contd...2

PART–C

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

8.a) Explain distributed two-phase site locking scheme for concurrency control in DDBMS with example. **(8)**

b) Discuss the main issues in designing a transparent RPC. **(7)**

9.a) Write and explain voting protocol algorithm. **(8)**

b) Explain the deadlock handling strategies in distributed systems. **(7)**

10.a) Explain the path-pushing algorithm. **(8)**

b) Explain the different features of distributed databases with respect to centralized databases. **(7)**

11.a) Explain any four issues in distributed operating system. **(8)**

b) Explain the different ways in designing fault tolerant in distributed system. **(7)**

12.a) Write a note on i) Parallelism in distributed query processing
ii) Timestamp based concurrency control **(8)**

b) Explain in detail the different argument problems. **(7)**

13.a) Write a note on i) Packet switching ii) Circuit switching **(8)**

b) What are the different methods to measure the performance of mutual exclusion? **(7)**

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(2012 batch onwards)

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St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester VI – Degree Examination

April - 2019

LINUX ADMINISTRATION

Time: 3 Hours

Max. Marks: 100

PART - A

Answer any TEN of the following: (10x2=20)

1. a) List the two types of Linux distributions.
   b) What is a multi-user system?
   c) Expand GNU and KDE.
   d) What is credit?
   e) List the information displayed by the command 'ls-l'.
   f) How to remove a link in Linux?
   g) Name the different wild card character used in Linux.
   h) What is a live USB?
   i) Give the classification of files in Linux OS?
   j) What is a utility program?
   k) What is the use of 'expr' command in Linux?
   l) What is the purpose of 'cat' command?

PART - B

Answer any FOUR of the following: (4x5=20)

2. List the advantage of using Linux.
3. Write a note on Linux distributions.
4. What is a link? Mention and explain the different types of links.
5. Explain the services provided by the internet.
6. Write the steps to set up network connections in Linux.
7. Write a shell program to find the reverse of a number.

PART - C

Answer any FOUR full questions of the following: (4x15=60)

8. a) Explain the Linux features. (10)
   b) Write a note on graphical interfaces. (5)

9. a) Explain the steps to customize k desktop environment. (10)
   b) Write the duties of Linux system administrator. (5)

10. a) How do you manage users and groups in Linux? (4)
    b) List and explain any five basic utilities of Linux. (6)
    c) Write a shell program to display 'n' Fibonacci numbers. (5)

Contd...2

11. a) Which are the two modes of Linux editors? Explain. (4)

b) Write utilities for displaying user and system information. (6)

c) What is free and open source software? List three characteristics of free software. (5)

12. a) How do you customize GNOME panels, Menus and desktop? (10)

b) Write a shell program to perform arithmetic calculations using CASE statement. (5)

13. a) Write a note on boot-up manager. (5)

b) Write the steps to set up network connections in Linux. (5)

c) What are the advantages of Linux? (5)

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G 603.6

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester VI – Degree Examination

April – 2019

MOBILE COMMUNICATION

Time: 3 hrs. Max Marks: 100

PART–A

1. Answer any TEN of the following: (10x2=20)

a) What is visitor location register in GSM?

b) Give reasons for handover.

c) What is equipment Identity register?

d) Give one example each for ad-hoc network and infrastructure-based wireless network.

e) What are the basic differences between wired LAN and wireless LAN?

f) What are the advantages of infra-red technology?

g) What are possible locations for care-of-address?

h) What is triangular routing?

i) What are the benefits of location information for routing in ad-hoc networks?

j) What is the reaction of standard TCP in case of packet loss?

k) What do you mean by wireless application environment?

l) What are the primary goals of WAP?

PART–B

Answer any FOUR of the following: (4x5=20)

2. Explain channel types of GSM.
3. Compare and contrast FDMA and TDMA.
4. Explain various services of wireless ATM.
5. Write a short note on piconet and scatternet.
6. What are the requirements of mobile IP?
7. What are the advantages of indirect TCP?

Contd...2

PART–C

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

8.a) Explain protocol architecture for GSM with a neat diagram. **(8)**

b) Explain reference model of wireless ATM. **(7)**

9.a) Briefly discuss the system architecture of IEEE 802.11 **(8)**

b) List the entities of mobile IP and describe data transfer from a mobile node to a fixed node. **(7)**

10.a) Describe client initialization procedure via DHCP. **(8)**

b) Explain transaction-oriented TCP. **(7)**

11.a) Describe the logical model for wireless application environment. **(8)**

b) Explain GSM services. **(7)**

12.a) Explain protocol stack of Bluetooth with a neat diagram. **(8)**

b) Compare and contrast indirect TCP, snooping TCP and mobile TCP. **(7)**

13.a) Write a short note on the following:

i) Mobile ad-hoc network **(8)**

ii) Wireless markup language.

b) Describe digital audio broadcasting. **(7)**

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