

Total No. of Questions : 09

Total No. of Pages : 02

MCA (Sem.-2)
LINUX ADMINISTRATION
 Subject Code : PGCA-1956
 M.Code : 79618
 Date of Examination : 20-12-22

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION - B & C have **FOUR** questions each.
3. Attempt any **FIVE** questions from SECTION B & C carrying **TEN** marks each.
4. Select atleast **TWO** questions from SECTION - B & C.

SECTION-A

1. Write short notes on :
 - a) What is the difference between LINUX and UNIX?
 - b) What does chmod 777 do in LINUX?
 - c) What is the difference between append mode and edit mode in vi editors?
 - d) How a package is installed in LINUX?
 - e) Write any five commands to set up DNS clients.
 - f) How to start and shut down Apache in LINUX?
 - g) How to install the Postfix server in LINUX?
 - h) How can you use Samba to authenticate against a windows server?
 - i) What are kernel and shell in LINUX?
 - j) Which type of file system is used in LINUX?

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SECTION-B

2. a) Explain how to use the grub command line.
b) Name different types of modes used in the VI editor.
3. a) What are file permissions in Linux? Name different types of file systems in Linux.
b) What do you mean by the daemons? Give an example.
4. a) Describe various disk management commands in LINUX with suitable examples.
b) Write a short note on: Managing groups and users in LINUX.
5. Describe the architecture of the LINUX operating system with the functioning of its various shells.

SECTION-C

6. Explain creating a basic website in Apache web server. Explain some of the performance parameters in Apache web server.
7. a) Name default ports used for DNS, SMTP, FTP, SSH, DHCP and squid.
b) Write the difference between Soft and Hard links?
8. What is Samba? Why is it required? Explain its requirement using a real-life example.
9. What is IIS? Write steps to configure DNS clients.



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MCA (Sem.-2)
ADVANCED JAVA
Subject Code : PGCA-1918
M.Code : 79617
Date of Examination : 17-12-2022

Time : 3 Hrs.

Max. Marks : 70

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2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

- 1) Write briefly :
 - a) List some of the databases supported by Hibernate.
 - b) What is a Java expression?
 - c) List the features of the object naming service in CORBA.
 - d) What is the role of POJO files in hibernate framework?
 - e) How duplicate form submission can be avoided in Struts framework?
 - f) What is the difference between a generic servlet and HTTP servlet?
 - g) What do you mean by JSP Standard Actions?
 - h) What is the role of a JAR file in JavaBeans?
 - i) What is the major difference between Socket programming and RMI programming?
 - j) List the key applications of EJB container.

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SECTION-B

2. Compare and contrast JavaBeans and Enterprise Java Beans (EJB). Discuss the features of any four classes provided by JavaBeans API.
3. Discuss the workflow of Struts framework and illustrate the steps using a simple form design.
4. Explain the concept of Custom Tags and discuss the steps to develop a custom tag with an example.
5. What do you mean by remote method invocation (RMI)? Explain the steps to create an RMI application between client and server.

SECTION-C

6. Discuss various types of session beans in Enterprise JavaBeans. List the advantages and disadvantages of each.
7. What do you mean by session tracking? Explain various mechanisms used for session tracking in servlets.
8. Explain the complete process of JSP development with the help of a suitable example.
9. **Write short notes on :**
 - a) Model-view-controller architecture.
 - b) COBRA architecture.



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SECTION-B

- 2) Create an HTML document that defines a table with columns for state, state bird, state flower and state tree. There must be at least five states as rows in the table. You must include attribute specifications for cell padding and cell spacing.
- 3) Create an HTML document to describe an unordered list of a typical grocery shopping list you write.
- 4) Write a **short note** on the following :
 - a) TCP/IP protocol
 - b) Transmission control protocol
- 5) Explain five basic formatting tags used to design an HTML document.

SECTION-C

- 6) Write HTML files that include JavaScript scripts for the following problem.
Output : A table of the numbers from 5 to 15 and their squares and cubes, using alert.
- 7) Create an HTML document that has a form with the following widgets :
 - a) A text widget to collect the user's name
 - b) Four checkboxes, one for the following items :
 - i. Four 100-watt light bulbs for \$2.39
 - ii. Eight 100-watt light bulbs for \$4.29
- 8) Write a note on linking documents.
- 9) What is the purpose of cascading style sheets? Explain in detail.

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MCA (Sem.-2)

INFORMATION SECURITY AND CYBER LAW

Subject Code : PGCA-1932

M.Code : 79619

Date of Examination : 14-07-22

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION - B & C have **FOUR** questions each.
3. Attempt any **FIVE** questions from SECTION B & C carrying **TEN** marks each.
4. Select atleast **TWO** questions from SECTION - B & C.

SECTION-A

1. Write short notes on :

- a) Define any two components of Information Security.
- b) Define CIA triad.
- c) How is Biometric Authentication different from password authentication?
- d) Differentiate between Honeypots and Firewall?
- e) Differentiate between Virus and Trojans?
- f) What is the difference between Law and Ethics?
- g) Define digital signatures.
- h) What is the significance of honeypots?
- i) What is intellectual property?
- j) What is phishing?



SECTION-B

2.
 - a. Differentiate between Password based and Token-based Authentication with suitable examples.
 - b. Why and how to provide security to Database Management Systems?
3. Discuss and compare various access control policies.
4. What are the types of malicious software? How they harm the network system?
5. What is the need for database security? What are database access controls in Database Management System?

SECTION-C

6. What is Intrusion Detection System? Differentiate between Host based and Network based IDS?
7. Discuss about Indian Cyber Laws.
8. Define firewalls. What are the various types of firewalls?
9. Differentiate between symmetric and asymmetric encryption. Describe transposition techniques by taking suitable examples.

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MCA (Sem.-2)
ADVANCED JAVA
Subject Code : PGCA-1918
M.Code : 79617
Date of Examination : 08-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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2. SECTION - B & C have **FOUR** questions each.
3. Attempt any **FIVE** questions from SECTION B & C carrying **TEN** marks each.
4. Select atleast **TWO** questions from SECTION - B & C.

SECTION-A

- 1) **Write briefly :**
- a) What are the events that are defined for sessions in servlets?
 - b) What do you mean by JSP directive?
 - c) What is the need of a Servlet filter?
 - d) What are the core interfaces of Hibernate framework?
 - e) What are the benefits of Struts framework?
 - f) How does COBRA support interoperability?
 - g) List the steps to define the remote interface using remote method invocation.
 - h) What do you mean by BDK? List its components.
 - i) List the advantages of JSP architecture.
 - j) What is stateless session bean?

SECTION-B

- 2) Explain the use of Hibernate framework as the persistence layer for retrieving and storing plain old Java objects (POJOs) to a relational database.
- 3) List and explain various implicit objects in JSP with examples. Also, discuss the concept of object scope in JSP.

- 4) Explain the steps to design a small application in struts with database connectivity.
- 5) Discuss the concept of entity beans in Enterprise Java beans. What are the mechanisms used by entity beans to persist business data?

SECTION-C

- 6) Discuss the structure of HTTP request and response. Why is HTTP called a Stateless protocol?
- 7) Explain model-view-controller architecture in detail.
- 8) Explain the life-cycle methods of a servlet and discuss the complete process of servlet development with the help of a sample program.
- 9) Write short notes on :
 - a. COBRA services
 - b. JAR files

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MCA (Sem.-2)
LINUX ADMINISTRATION
Subject Code : PGCA-1956
M.Code : 79618
Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks : 70

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2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write short notes on :

- a) What is the difference between LINUX and Windows?
- b) What is the use of VI editor in LINUX?
- c) What file permissions can be given to a user in LINUX?
- d) What is a package and how it is different from a folder in windows?
- e) How HTTP is different from HTTPS?
- f) What is the use of APACHE in the LINUX system?
- g) How a server is different from a normal computer?
- h) What is the meaning of SWAT?
- i) In which scenario, you will prefer windows over LINUX? Give an example.
- j) What is the usage of the SAMBA server?



SECTION-B

2. Explain the following commands with examples: ls, rm, cp, mv, chown, chmod.
3. Which are the different file systems supported by Linux? Which feature of Linux makes this support possible (Virtual File Systems Layer)?
4. a) What are file permissions in Linux? Name different types of file systems in Linux.
b) What do you mean by the Daemons? Give an example.
5. Write a short note on Vi editor and its mode; Users and Groups in Linux; Configuring packages in Linux.

SECTION-B

6. What is DNS? Why is it necessary? What are top level domains? Give 3 examples of TLDs.
7. a) Explain the following terms:
(i) Mail user agent
(ii) Mail transfer agent
(iii) Local delivery agent.
8. State the features of Apache web server .
9. a) What is a POP3 server?
b) What is a secure web server? What are its components? Which packages are needed to create secure web server?

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M.C.A. (Sem.-2)

DESIGN AND ANALYSIS OF ALGORITHMS

Subject Code : PGCA-1920

M.Code : 79616

Date of Examination : 06-07-22

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write briefly :
- a) Divide and Conquer
 - b) Greedy approach
 - c) Recursive algorithms
 - d) Branch and Bound
 - e) Radix Sort
 - f) NP-Hard problem
 - g) Graph traversal
 - h) Binary search
 - i) Sorted Array
 - j) Knapsack problem

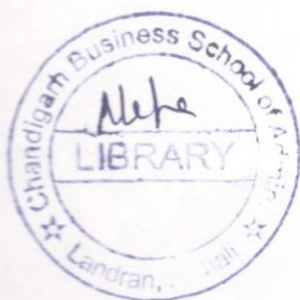


SECTION-B

2. Define time complexity and space complexity. Write an algorithm for adding n natural numbers and find the space required by that algorithm.
3. Write a note on the mathematical analysis of recursive and non-recursive algorithms using suitable examples.
4. Why is randomization and dynamic programming required? Explain with the help of suitable algorithms.
5. Given a set of cities and the distance between every pair of cities, the problem is to find the shortest possible route that visits every city exactly once and returns to the starting point. What is this problem called? Explain the solution in detail.

SECTION-C

6. Describe how bubble sort works and analyse the running time for the sequence 6 5 3 1 8 7 2 4.
7. Classify Sorting Algorithms and explain how insertion sort works with help of its algorithm.
8. What is string matching problem? Discuss various algorithms used for string matching.
9. What is the difference between Depth first search and Breadth first search? Explain with examples. And what are their applications.



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M.C.A. (Sem.-2)
DESIGN AND ANALYSIS OF ALGORITHMS
Subject Code : PGCA-1920
M.Code : 79616
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- c) Recursive algorithms
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- 1) Write briefly :
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 - What do you mean by JSP directive?
 - What is the need of a Servlet filter?
 - What are the core interfaces of Hibernate framework?
 - What are the benefits of Struts framework?
 - How does COBRA support interoperability?
 - List the steps to define the remote interface using remote method invocation.
 - What do you mean by BDK? List its components.
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SECTION-B

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- 4) Explain the steps to design a small application in struts with database connectivity.
- 5) Discuss the concept of entity beans in Enterprise Java beans. What are the mechanisms used by entity beans to persist business data?

SECTION-C

- 6) Discuss the structure of HTTP request and response. Why is HTTP called a Stateless protocol?
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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-2)
INFORMATION SECURITY AND CYBER LAW

Subject Code : PGCA-1932

M.Code : 79619

Date of Examination : 14-07-22

Time : 3 Hrs.

Max. Marks : 70

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SECTION-A

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- a) Define any two components of Information Security.
- b) Define CIA triad.
- c) How is Biometric Authentication different from password authentication?
- d) Differentiate between Honeypots and Firewall?
- e) Differentiate between Virus and Trojans?
- f) What is the difference between Law and Ethics?
- g) Define digital signatures.
- h) What is the significance of honeypots?
- i) What is intellectual property?
- j) What is phishing?



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SECTION-B

2. a. Differentiate between Password based and Token-based Authentication with suitable examples.
b. Why and how to provide security to Database Management Systems?
3. Discuss and compare various access control policies.
4. What are the types of malicious software? How they harm the network system?
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SECTION-C

6. What is Intrusion Detection System? Differentiate between Host based and Network based IDS?
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