

Mumbai University

Question Paper



NETWORK SECURITY

B.Sc.IT: Semester – V

April – 2014

Time: 2 ½ Hours

Total Marks: 60

- N.B.:** (1) All Question are Compulsory.
 (2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.
 (3) Answer To The Same Question Must Be Written Together.
 (4) Number To The Right Indicates Marks.
 (5) Draw Neat Labeled Diagrams Wherever Necessary.
 (6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the Key Principles of Security? Brief them. (5)
 (B) Explain the different Active Attack? (5)
 (C) Write Short Notes On: (5)
 (i) Mono-Alphabetic Cipher
 (ii) Rail Fence Technique
 (D) Describe the Diffie-Hellman Key Exchange Algorithm with an example. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are Algorithmic Modes? Explain the working of Cipher Feedback Mode. (5)
 (B) How the Key Transformation is done in DES? What is the purpose of XOR and Swap Operations with respect to DES? (5)
 (C) Compare the processes of RC4 and RC5. (5)
 (D) Explain the purpose of Subkey Generation in Blowfish. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Asymmetric Key Cryptography? How does it work? (5)
 (B) Describe the RSA Algorithm with an example. (5)
 (C) State the requirements for a Message Digest by a Sample Digest. (5)
 (D) What are the problems faced in Public Key Exchange? (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write Short Notes On: (5)
 (i) Digital Certificates
 (ii) Certifying Authority
 (B) Describe the five Architecture Areas of PKIX Model. (5)
 (C) What are Hash Functions? Explain its working. (5)
 (D) Explain the Station to Station Protocol. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the TCP Segment Format with a neat diagram. (5)
 (B) What is an Application Gateway? How does it differ from Packet Filters? (5)
 (C) Describe the Handshake Protocol of SSL. (5)
 (D) What are the processes of SET? (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State the different steps involved in Clear Text Passwords. (5)
 (B) Write a Short Notes on Kerberos. (5)
 (C) What is a Key Distribution Centre? Explain the concept with a diagram. (5)
 (D) Describe the Mutual Authentication Approach. (5)

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ASP.NET WITH C#

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Differentiate between Overloading and Overriding in C#. (5)
(B) Draw and Explain .NET Framework Architecture. (5)
(C) Explain how Multiple Inheritance is achieved using interfaces. (5)
(D) What is Flow Control? Explain Break and Continue Statements. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List and explain the components of Assembly. (5)
(B) How Garbage Collector works? (5)
(C) Explain Inline-Stylesheet and Embedded Stylesheet. (5)
(D) List and explain the stages of ASP.NET Page Life Cycle. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain glogal.asax file. (5)
(B) What are the uses of AutoPostBack and runat properties? (5)
(C) Differentiate between Inline-Code and Code-Behind. (5)
(D) Explain ListBox Control with properties and methods. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain CustomValidator Control with sample code. (5)
(B) What is State Management? Explain Application State Management. (5)
(C) What is use Querystring? Explain Encoding and Decoding of Querystring. (5)
(D) Explain relationship between Content Page and Master Page. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write the steps with sample code to use Windows Authentication. (5)
(B) List and explain various templates provided by ListView Control. (5)
(C) Explain Command Class and DataAdapter Class with properties and methods. (5)
(D) Explain ASP.NET Provider Model with suitable diagram. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain UpdatePanel Control with example. (5)
(B) What are uses of the Document Ready Event and of jQuery Callback Functions? (5)
(C) What is difference between SQL and LINQ? List the advantages of using LINQ. (5)
(D) Write short notes on:
(i) LINQ to Objects
(ii) Query Expression (5)

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Question Paper



SOFTWARE TESTING

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Define the terms Error, Defect and Failure with reference to Software Testing. (5)
(B) Explain any two Testing Principles. (5)
(C) Describe Test Analysis and Design Activities. (5)
(D) State and explain Fundamentals Test Process in brief. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) With the help of diagram explain V Model. (5)
(B) Explain Alpha and Beta Testing with reference to Acceptance Testing. (5)
(C) Write a note on Regression Testing. (5)
(D) What is the importance of Maintenance Testing? Explain. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Compare Static Testing with Dynamic Testing. (5)
(B) Describe the Phases of Formal Review. (5)
(C) Explain the goals of Technical Review. (5)
(D) "Inspection is the most Formal Review Technique". Discuss. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Define Specification Based Testing Technique and State any four techniques used under it. (5)
(B) Explain Boundary Value Analysis with suitable example. (5)
(C) Explain State Transition Testing Technique with suitable example. (5)
(D) State and explain the factors considered for choosing Test Techniques. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What do you mean by Test Approaches? Explain any two. (5)
(B) What is a Test Plan? State and explain any four components of a Test Plan. (5)
(C) What are the purpose of Test Monitoring? (5)
(D) Write a note on Risk Based Testing. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain characteristics of Test Management Tools. (5)
(B) Explain any one tool used for Static Testing. (5)
(C) Explain any one tool that supports for Performance Monitoring. (5)
(D) State and explain Risk Factors associated with use of the Testing Tools. (5)

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ADVANCED JAVA

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are Adapter Classes? What are Inner Classes? Explain with examples. (5)
 (B) Explain the Java Event Delegation Model. (5)
 (C) What are the different types of layout in Java? Explain GridLayout. (5)
 (D) What are the different operations that can be carried out on Frame Window? (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) With the help of an example explain JColorChooser Component. (5)
 (B) Compare and Contrast AWT and Swing. (5)
 (C) Explain JScrollPane with Example. (5)
 (D) How are Menus created in Java? What are the classes used for creating Menus? Explain with example. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are Servlets? What are the advantages and disadvantages of JSP? (5)
 (B) Explain the Life Cycle of Servlet. (5)
 (C) Explain the following Elements of the web.xml file of servlet. (5)
 (i) `<servlet>`
 (ii) `<servlet-mapping>`
 (iii) `<session-config>`
 (iv) `<welcome-file-list>`
 (v) `<web-app>`
 (D) Write a Servlet program to display sentence Welcome along with the name entered by the user through an HTML form. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is JSP? What are the Advantages and Disadvantages of JSP? (5)
 (B) Write a JSP Code to print the details entered in the form on the Next Page. The details are entered in the HTML page are Name in textbox, UserName in textbox, Date of Birth in textbox, Date of Joining in textbox, Gender in Radio Button. (5)
 (C) Explain the Architecture of JDBC. (5)
 (D) Write a JDBC program to insert five records in Customer table with fields CustomerNo, FirstName, LastName, Address, MobileNumber and Email. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Architecture of Enterprise Java Beans. (5)
 (B) What are the different types of Enterprise Java Beans? Explain. (5)
 (C) Explain the Life Cycle of JSF. (5)
 (D) What is Facelet? What are its features? (5)

[TURN OVER]

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Object Relational Mapping? What are its advantages? (5)
- (B) Explain the Hibernate Framework. (5)
- (C) Explain the struts Framework. (5)
- (D) Explain web.xml and struts.xml files. (5)
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LINUX

ADMINISTRATION

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the features of Linux in detail with different Linux Distributions. (5)
(B) Compare GRUB and LILO Boot Loaders. (5)
(C) Explain the role of administration in creating and administrating users. (5)
(D) Explain the Linux Directory Structure. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Which file need changes for setting up the IPv4 address? Explain. (5)
(B) What is DHCP? How is configured? (5)
(C) Enumerate the features of NFS4. (5)
(D) Explain the following files in /etc/config. (5)
(i) kernel
(ii) kudzu
(iii) network
(iv) xinetd
(v) selinux

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) How is a Linux Machine connected to a Windows Machine? Explain. (5)
(B) What are the different sections on smb.conf file? Explain. (5)
(C) What is Timer Server? What is NTP? (5)
(D) Explain squid? How is it configured? Explain. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the files required to configure DNS Server. (5)
(B) Explain the two programs used to check the DNS configuration. (5)
(C) Explain rsh and finger Linux services. (5)
(D) How is xinetd server configured? (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Why aliases are required while configuring Send Mail? What are the changes that are required for creating an alias? (5)
(B) What is vsftpd? What are its features? (5)
(C) How is IMAP Server configured for handling mails? (5)
(D) What are the fields required for the configurations of vsftpd? Explain. (5)

[TURN OVER]

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the features of Apache Web Server. (5)
- (B) Write the purpose of the following global configuration directives of httpd.conf (5)
- (i) *Keepalive*
 - (ii) *KeepaliveTimeout*
 - (iii) *MaxClients*
 - (iv) *ServerLimit*
 - (v) *StartServers*
- (C) What are the advantages of Shadow Password? What are the fields in /etc/shadow? (5)
- (D) Explain rpmquery command with options. (5)
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