Mumbai University

Question Paper

NETWORK SECURITY

B.Sc.IT: Semester – V

October – 2013

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)   Explain the concept of Key Range and Key Size.   **(5)**
(B)   Define the following terms: **(5)**
     (i)   *Cryptography*
     (ii)   *Cryptanalysis*
     (iii)   *Brute-Force Attack*
     (iv)   *Symmetric Key Cryptography*
     (v)   *Asymmetric Key Cryptography*
(C)   What are Transposition Techniques? Explain any one with the help of an example.   **(5)**
(D)   What are the Ethical and Legal Issues in Computer Security System?   **(5)**

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

(A)   Explain the Cipher Block Chaining Mode of the Algorithm in detail.   **(5)**
(B)   Explain Blowfish Algorithm and its advantages.   **(5)**
(C)   Explain the steps in each round of DES.   **(5)**
(D)   Explain the main features of AES, explain its steps at a high level.   **(5)**

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

(A)   Explain the basics of Digital Signature.   **(5)**
(B)   Explain the concept of Message Digest. What are the requirements of the Message Digest?   **(5)**
(C)   Why HMAC cannot be trusted to be used in Digital Signatures?   **(5)**
(D)   Explain the security solution based on the concept of Digital Envelope. Explain the security solution   **(5)**
based on the concept of Digital Envelope.

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

(A)   What is Digital Certificate? How is it created?   **(5)**
(B)   Write a brief note on Cross Certification in Digital Certificates.   **(5)**
(C)   What are CRLs (Certificate Revocation Lists)? How are they used?   **(5)**
(D)   Write a brief note on PKCS#5 Password Based Encryption (PBE) Standard.   **(5)**

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

(A)   Explain the functioning of Packet Filter Firewall. Explain the possible attacks on it.   **(5)**
(B)   Explain the advantages and applications of IPSec.   **(5)**
(C)   Explain the concept of Dual Signature in SET (Secure Electronic Transaction).   **(5)**
(D)   What is PGP? Explain how PGP works.   **(5)**

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

(A)   Explain Authentication Method based on Challenge/Response Tokens.   **(5)**
(B)   How does Certificate Based Authentication work?   **(5)**
(C)   Write a brief note on Kerberos.   **(5)**
(D)   Explain different approaches of Mutual Authentication.   **(5)**

Mumbai University Question Paper

ASP.NET WITH C#

B.Sc.IT: Semester – V

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

(A)   What is .NET Framework? What is in the .NET Framework?   **(5)**

(B)   What is Method Overloading? What are the steps involved for the selection of a method in Method   **(5)**
     Overloading?

(C)   What is the difference between Overriding Methods and Hiding Methods?   **(5)**

(D)   Write a C# program to do the following: Initialize an array A with 10 elements. Initialize an array B   **(5)**
     with 7 elements. Divide each element of array A with each element of array B that is a[0] / b[0], a[1]
     / b[1] etc. Implement the same to handle Divide by zero error and Index out of bound error.

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

(A)   Delegates in C# are used for Event Handling. Justify this statement with a relevant example program.   **(5)**

(B)   What is the significance of Assemblies in .NET?   **(5)**

(C)   List and explain the use of any five Namespaces in C#.   **(5)**

(D)   What is the need of CSS in ASP.NET? Explain the different types of CSS in ASP.NET.   **(5)**

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

(A)   Explain the Text Box Web Server Control. List and explain any four Text Box Attributes.   **(5)**

(B)   What is the difference between Check Box and Radio Button Control? What are the common   **(5)**
     attributes associated with these controls?

(C)   Explain any five properties of List Box and Drop-Down List Controls.   **(5)**

(D)   What is the difference between .aspx file and .cs file? Explain with an example for each.   **(5)**

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

(A)   In a web form the details of an employee is filled in after he/she is employed in the company. In the   **(5)**
     design there is a Text Box to fill the First Name, a Text Box to fill the Last Name, a Text Box to fill the
     Surname, a text box to enter Email Address, a Text Box to enter the Email Address again to confirm
     the same, a text box to fill the age. What are the Validation Controls that have to be added for each
     field in the form?

(B)   Explain the role of View State and Session State in ASP.NET.   **(5)**

(C)   What is the significance of Master pages in ASP.NET? What is the name given to pages other than   **(5)**
     Master Pages? Explain in detail.

(D)   Explain Menu and TreeView Site Navigation Controls.   **(5)**

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

(A)   What is the use of GridView Control in ASP.NET?   **(5)**

(B)   Explain FormView Control.   **(5)**

(C)   Explain the term Authentication with respect to ASP.NET Security.   **(5)**

(D)   What is the difference between Authorisation and Impersonation in terms of Security in ASP.NET?   **(5)**

[TURN OVER]

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

(A) Explain the LINQ Query Syntax with an example Query. **(5)**

(B) Explain the terms Take, Skip, TakeWhile, SkipWhile, First, FirstOrDefault, Last, LastOrDefault with respect to LINQ. **(5)**

(C) Explain the use of UpdateProgress Control and Timer Control in AJAX. **(5)**

(D) What are the different types of Selectors present in JQuery? Explain. **(5)**

Mumbai University Question Paper

Software Testing

B.Sc.IT: Semester – V
October – 2013

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

(A) What is a Defect? What are its Causes? When do they Arise? What is the Cost of Finding Defect? **(5)**
(B) What is Quality? Explain Quality Viewpoints for producing and Buying Software. **(5)**
(C) Explain the Fundamental Principles of Testing. **(5)**
(D) Explain the Fundamental Test Process. **(5)**

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

(A) Explain the V-Model of Testing. **(5)**
(B) What is Extreme Programming? What are its characteristics? **(5)**
(C) What are the different levels of Testing? Explain each in brief. **(5)**
(D) What are the four types of Software Testing? Explain each. **(5)**

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

(A) What is Static Testing? What are its advantages? **(5)**
(B) Explain the phases of Formal Review. **(5)**
(C) What are the different types of Reviews? What are the goals and characteristics of inspection? **(5)**
(D) What are the success factors of Reviews? Explain. **(5)**

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

(A) What are the different types of Testing Techniques? Explain. **(5)**
(B) Explain Equivalence Partitioning and Boundary Value Analysis with examples. **(5)**
(C) What is Decision Table? Explain with example. **(5)**
(D) State and explain the factors that influence the decision about which technique to use. **(5)**

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

(A) What are the benefits of independent testing? What are the skill sets required by a software tester? **(5)**
(B) Explain various types of test strategies. How to pick up the best types of strategies for success? **(5)**
(C) What is the purpose of test monitoring? Explain the IEEE 829 test log template. **(5)**
(D) What is an incident report? What does it contain? **(5)**

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

(A) What are the features of Test Management Tools and Configuration Management Tools? **(5)**
(B) What are test Execution Tools? What are their characteristics? **(5)**
(C) What are benefits and risks of using tools? Explain. **(5)**
(D) What are the important factors in selecting a tool? What are the objectives of pilot project for a new tool? What are the factors that contribute to the success after implementing a Testing Tool? **(5)**

Mumbai University
Question Paper

Advanced Java

B.Sc.IT: Semester – V
October – 2013

**Time:** 2 ½ Hours **Total Marks:** 60

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

(A) Write a short note on "Event Listeners". Explain the working with Code Specification. **(5)**
(B) How does AWT create Radio Buttons? Explain with Syntax and Code Specification. **(5)**
(C) What is the Default Layout of the Frame? Explain the same. **(5)**
(D) Write a Java AWT Program that creates the following GUI (Consider the Window Closing Event). **(5)**

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

(A) Explain the new features of JFC. **(5)**
(B) How to denote the user about the Software Loading Process? Which component is facilitating the same? Explain with Code Specification. **(5)**
(C) How do divide frame window in 2 parts? Explain with code specification. **(5)**
(D) Write a Java Swing Program that creates the above mentioned Hierarchical Tree Data Structure. **(5)**
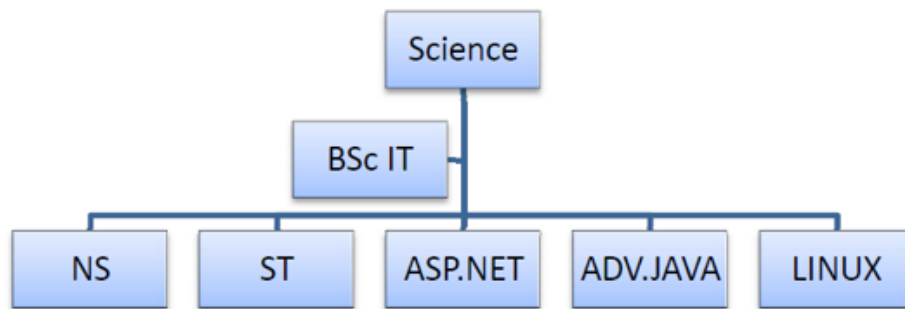
Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain the reasons why servlet prefer over CGI. **(5)**
(B) Explain the methods that RequestDispatcher interface does consist of with the relevant Code Specification. **(5)**
(C) Write a Servlet that prints the Sum of Square of n Integer Numbers. **(5)**
(D) Explain the Life Cycle phases of Servlet. **(5)**

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

(A) Explain the components of JDBC. **(5)**
(B) Write an exhaustive note on "PreparedStatement". Attach Code Specification to support your answer. **(5)**
(C) Enlist the Implicit objects of JSP. Explain any 4 of them in detail. **(5)**
(D) Write a JSP that accepts user-login details and forward the result either "Access granted" OR "Access denied" to result.jsp. **(5)**

[TURN OVER]

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

(A)   Enlist the lifecycle phases of JSF. Explain the following phases in detail.   **(5)**
- *Restore View*
- *Apply Request Values*
- *Update Model Values*
- *Render Response*

(B)   How does JSF application get execute? Explain.   **(5)**

(C)   Write a Session Bean Code Specification that Calculates Compound Interest. Assume the Principal,   **(5)**
Terms and Rate of Interest is entered by the user and the input is passed through a Servlet.

(D)   Explain the advantages of EJB.   **(5)**

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

(A)   Explain the different roles of Action in Struts Framework.   **(5)**

(B)   What is Value-Stack? What are the different types of Objects that it can Hold Off? Explain their   **(5)**
Accessing Strategy.

(C)   Explain the importance of Mapping and show the Creation of Mapping File in Hibernate Framework.   **(5)**

(D)   Explain the Architecture of Hibernate Framework in detail.   **(5)**

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Linux
Administration

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

(A)   Explain the GRUB configuration file. **(5)**
(B)   List and explain the duties of system administrator. **(5)**
(C)   What is RAID? Explain different types of RAID. **(5)**
(D)   Write the purpose of the following directories of /(root) **(5)**

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

(A)   Explain the concept of CIDR with suitable example. **(5)**
(B)   What is DHCP? How is it configured? **(5)**
(C)   Explain the concept of NFS with suitable example. **(5)**
(D)   Explain the use of cron files. **(5)**

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

(A)   Explain the smbclient and smbmount commands with suitable example. **(5)**
(B)   Explain the browseable, writable, create mode, directory mode and max connection parameters of **(5)**
      [home] section of samba configuration file.
(C)   Explain the concept of catching proxy server. **(5)**
(D)   Write the purpose of the following NTP utility programs. **(5)**

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

(A)   What is the use of zone file? Explain with suitable example. **(5)**
(B)   Write the purpose of the following Secure Services: **(5)**
      (i) *SSH*
      (ii) *scp*
      (iii) *sftp*
      (iv) *telnet*
      (v) *rlogin*
(C)   List and explain different types of domain name servers. **(5)**
(D)   What is xinetd? Explain how it works? **(5)**

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

(A)   What is MDA? Explain how it works? **(5)**
(B)   Write the purpose of the following parameters of vsftpd.conf file. **(5)**
      (i) *anonymous_enable*
      (ii) *write_enable*
      (iii) *chown_username*
      (iv) *ftpd_banner*
      (v) *dirmessage_enable*
(C)   Write the advantages of vsftpd. **(5)**
(D)   List and explain the key components that are essential for email to work. Explain in short. **(5)**

[TURN OVER]

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

(A) Explain the following values of AllowOverride directive of <Directory > block of apache server configuration file. **(5)**

(B) Write an SSI page that will display the long listing of the directory /home/tyit. **(5)**

(C) Explain rpmquery command with options. **(5)**

(D) Write the syntax of useradd command used to create new user account. **(5)**