

T.Y.B.SC. (IT) [SEM -V]

Network Security

(May-2017)

Q.P. Code : 360900

(3 Hours)

Total Marks : 100

Note : 1) All questions are **compulsory**.

2) Make **suitable assumptions** wherever necessary and **state the assumptions made**.

3) Answers to the **same question** must be **written together**.

4) Numbers to the **right** indicate **marks**.

5) Draw **neat labeled diagrams** wherever **necessary**.

6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any two** of the following:

10

- Write a note on Security mechanism
- What is Kerberos? Explain.
- Explain the SSL architecture and explain the SSL protocol stack.
- What is DDOS attack? What are the ways in which DDOS attack can be classified?

2. Attempt **any three** of the following:

15

- Give the difference between Symmetric and asymmetric encryption.
- Give the general structure of DES algorithm. Explain the various mode of operation.
- Explain the RSA cryptosystem.
- Explain Vigenere Cipher. Encrypt the following text using vigenere cipher with keyword MUMBAI
"TOMORROW IS A NEW DAY"
- Define entropy. Explain the properties of entropy.
- What is cryptanalysis? Explain the cryptanalysis of DES

3. Attempt **any three** of the following:

15

- Explain the MD4 algorithm for message digest generation.
- Explain the digital signature standard.
- Explain the Diffie-Hellman key exchange algorithm
- What are the different cryptographic hash function criteria?
- What is key predistribution? Explain the concept.
- Write a note on Fail-stop signatures.

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4. Attempt **any three** of the following: 15
- Describe the various security services.
 - What are the various security attacks identified under the OSI security architecture? Explain.
 - Explain the security mechanism defined by X.800.
 - What is nonrepudiation? Explain with the help of an example.
 - Explain the model for Network Security.
 - Explain the challenges involved in establishing computer security.
5. Attempt **any three** of the following: 15
- How is the certificate processing carried out by S/MIME?
 - What is PGP protocol used for? Explain its features.
 - When is the user certificate revoked in X.509? Explain each scenario.
 - Write a note on Compression in PGP.
 - What are the three enhanced security services proposed for S/MIME?
 - Explain the authentication procedures used by X.509.
6. Attempt **any three** of the following: 15
- What is ESP used for? Explain the ESP format in detail.
 - Explain the basic combination of security association. What is the advantage of combining the security associations?
 - What is SSL Record protocol? Explain its operations.
 - State the areas where SET protocol can be used. Summarize the participants in SET system.
 - Write a note on ISAKMP.
 - Write a note on TLS.
7. Attempt **any three** of the following: 15
- Explain the various ways in which a password file can be protected.
 - Explain the architecture of Distributed intrusion detection.
 - What are malicious programs? Give its classification.
 - Write a note on Trojan horse.
 - What are firewalls? What are its characteristics?
 - What are the various firewall configurations possible? Explain any one in detail.

T.Y.B.SC. (IT) [SEM -V]**ASP.NET with C#****(May-2017)****(3 Hours)****[Total Marks: 100]**

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any two of the following:** **10**
 - a. Explain the .NET Framework.
 - b. Write a short note on Assembly.
 - c. Explain the RangeValidator control.
 - d. Write a program to check whether the entered number is palindrome number or not.

2. **Attempt any three of the following:** **15**
 - a. Explain the components of Assembly.
 - b. Write a short note on CIL and JIT Compiler.
 - c. What is Namespace? Explain any four Namespaces.
 - d. Write the naming rules and conventions of the variable.
 - e. Explain Garbage Collector.
 - f. Write a program that places double quotation marks around each word in a string.

3. **Attempt any three of the following:** **15**
 - a. Write a short note on Delegate.
 - b. Explain the different types of Collections in .NET.
 - c. Explain the Comparison and Logical operators in C#.
 - d. Explain List Box control with any four properties.
 - e. What is the use of the menus and toolbars in Windows Application? Explain.
 - f. Explain the TextBox control with any four Properties

4. **Attempt any three of the following:** **15**
 - a. Explain the ASP.NET Life Cycle.
 - b. Write a short note on Themes.
 - c. What is CSS selector? Explain any four selectors present in CSS.
 - d. Explain the global.asax files in ASP.NET application.
 - e. What is CSS? Explain the Inline and Embedded CSS.
 - f. Write a short note on Server side State management.

5. **Attempt any three of the following:** **15**
 - a. Explain the Menu navigation control with its properties.
 - b. Explain the Master Page and Content Page.
 - c. Explain the TreeView site navigation control
 - d. Explain the different Access Modifiers.
 - e. What is the use of Compare validator? Explain it along with its properties.
 - f. What is regular expression? Explain regex patterns.

6. **Attempt any three of the following:** **15**
 - a. Explain ADO.NET objects.
 - b. List all the steps in order to access a database through ADO.NET.
 - c. What are the different ways to implement LINQ.

- d. What is Authentication? Explain its different types.
- e. Write a short note on Authorization.
- f. List and explain any four different query operators in LINQ

7. Attempt any three of the following:

15

- a. Write a short note on JQuery.
- b. What is ASP.NET AJAX? Explain the working of AJAX.
- c. What are the different types of selectors present in JQuery.
- d. Explain DOM manipulation methods in JQuery.
- e. Explain the Timer control with its attributes.
- f. Explain the use of UpdateProgress control in AJAX.

T.Y.B.SC. (IT) [SEM -V]

Software Testing

(May-2017)

QP Code : 361100

(3 Hours)

[Total Marks : 100

- N.B.:** (1) All questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answer to the **same question** must be **written together**.
(4) **Numbers** to the **right** indicate **marks**.
(5) Draw **neat labelled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt any **two** of the following :— **10**
- Explain the BIG BANG approach of testing.
 - Explain brainstorming process.
 - How to write good test case ?
 - What are the characteristics of good requirements ?
2. Attempt any **three** of the following :— **15**
- Define quality. Discuss the customer's view of quality.
 - Differentiate between 'Q' organisation and 'q' organisation.
 - Describe any one software development model in detail.
 - What are the principles of software testing ? Discuss.
 - Define testing. Why testing is necessary ?
 - Explain VV model for testing with diagram.
3. Attempt any **three** of the following :— **15**
- What is boundary value testing ? List all the limitations of boundary value testing.
 - Explain the concept of equivalence class testing with an example.
 - What is decision table based testing. Where it can be used and list the components of decision based testing.
 - Differentiate between strong equivalence class testing and weak equivalence class testing.
 - Discuss the advantages and disadvantages of decision table based testing.
 - Write the guidelines for boundary value testing.
4. Attempt any **three** of the following :— **15**
- What are the coverage criteria ? Explain the testing process of data flow.
 - Discuss the Data Flow analysis anomalies.
 - Explain the concept of program graph with an example.
 - Describe metric based testing.
 - Discuss the four steps method devised by McCabe to carry out basis path testing.
 - Write a short note on LOOP Coverage.

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5. Attempt any **three** of the following :— 15
- (a) What are the levels of testing ? Explain.
 - (b) What is integration testing ? List all the integration testing strategies. Explain any one.
 - (c) List all advantages and disadvantages of call graph integration testing.
 - (d) Briefly explain the concept of system testing.
 - (e) Define the term 'Interaction'. Discuss Taxonomy of interactions.
 - (f) Define Threads. What are the distinct levels of threads ?
6. Attempt any **three** of the following :— 15
- (a) Explain Object oriented testing.
 - (b) Discuss the relationship between collaboration diagrams and sequence diagrams.
 - (c) How object oriented integration testing is different from object oriented testing.
 - (d) Discuss the implications of composition and encapsulation.
 - (e) Write a short note on class testing.
 - (f) What is UML based system testing ? Explain.
7. Attempt any **three** of the following :— 15
- (a) Define Test Policy. Explain the general content of Test Policy.
 - (b) What is Test Plan ? What are the benefits of Test Plan.
 - (c) Describe the purpose of Test Reports.
 - (d) Explain benchmarking concept. Why it is required ?
 - (e) Differentiate between qualitative data and quantitative data.
 - (f) Explain the concept of checklist.

T.Y.B.SC. (IT) [SEM -V]

Advanced Java

(May-2017)

Q.P. Code : 361200

(3 Hours)

Total Marks : 100

Note : 1) All questions are compulsory.

- 2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
- 3) Answers to the **same question** must be **written together**.
- 4) Numbers to the **right** indicate **marks**.
- 5) Draw **neat labeled diagrams** wherever **necessary**.
- 6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any two** of the following: 10
 - a) What are JSP elements? Explain directives in the category.
 - b) Explain the role of interceptors in struts.
 - c) What is progress bar in swing? Explain the importance of it with code specification.
 - d) Explain the local and remote interface view strategy of EJB.
2. Attempt **any three** of the following: 15
 - a. Explain about the creation of table in swing.
 - b. Explain about the usage of JSplitPane component.
 - c. Explain the concept of JColorChooser in brief. Add suitable illustration to it.
 - d. "Swing Components are light-weight components"-Explain this statement.
 - e. Explain how to create dialog boxes such as message box and input box.
 - f. Explain about the creation of "Hierarchical Tree Structure" of swing.
3. Attempt **any three** of the following: 15
 - a) What is CGI? What are the issues that it has? Explain.
 - b) Explain the life cycle phases of Servlet.
 - c) Write a Servlet that prints the reverse of the given number.
 - d) Write an exhaustive note on "HTTP Session".
 - e) How a Servlet does redirection of pages? Add suitable illustration to it.
 - f) Write a Servlet to find the cube root of the given number.
4. Attempt **any three** of the following: 15
 - a) Write the advantages of JDBC API.
 - b) Explain how to insert dynamic values onto the backend table. Which subclass of Statement is used for the same?
 - c) Explain how JSP works.
 - d) Write ajsp to find the square root of the given number. Accept number through html
 - e) Explain <jsp:usebean>, one of the action tags of JSP.
 - f) Explain the term "Character Quoting Conversions".

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5. Attempt **any three** of the following: 15
- What is JSF? Explain the features of JSF 2.0?
 - Explain the concept of result interface.
 - Write a short note on EJB container.
 - What are the different types of EJB? Explain
 - What is facade? How it is controlled by facade controller?
 - What are the advantages of EJB? Explain.
6. Attempt **any three** of the following: 15
- What is Struts? Explain the application flow of MVC pattern of struts.
 - Explain the role of OGNL in struts.
 - Explain the relationship between hibernate application and the database.
 - Give the code specification of hibernate.cfg.xml that holds the connection details of customer table of company database.
 - Create a simple struts application that prints the result page from an appropriate action.
 - Explain the significance of hibernate framework.
7. Attempt **any three** of the following: 15
- Explain the concept of Resource Injection.
 - Draw and explain the architecture of web services.
 - What are the contents of Java mail API? Explain.
 - Explain the significance of JNDI.
 - Write a session bean java source code to send the mail to the given recipient.
 - How to access the web services that we created already? Explain the steps in creating the client.
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T.Y.B.SC. (IT) [SEM -V]
Linux Administration
(May-2017)

Q.P. Code : 361301

(Hours)

[Total Marks : 100

- N.B. :** (1) All questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and state the assumptions made.
(3) Answers to the **same question** must be **written together**.
(4) **Numbers** to the **right** indicate **marks**.
(5) **Draw** neat labeled **diagrams** wherever **necessary**.
(6) Use of Non-programmable calculators is allowed.

1. Answer **any two** of the following: **10**
- (a) Explain Smbclient, smbmount commands with suitable example.
 - (b) Explain the use of cron files.
 - (c) Explain the concept of subnetting with example.
 - (d) Write a short note on GRUB.
2. Attempt **any three** of the following: **15**
- (a) Write the importance of rc scripts.
 - (b) Explain the concept of runlevel used in Linux.
 - (c) What is RAID? Write different types of RAID. Explain various levels of RAID.
 - (d) Write the purpose of any five directories of / .
 - (e) Write the basic steps used to boot the system.
 - (f) Write the duties of system administrator.
3. Attempt **any three** of the following: **15**
- (a) Explain the concept of NFS with suitable example.
 - (b) What is CIDR ? Explain with suitable example.
 - (c) Explain the concept of DHCP with example.
 - (d) Write the advantages and disadvantages of NFS.
 - (e) Explain any five NFS export options.
 - (f) List various files used in Linux to add a system to network. Explain.

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4. Attempt **any three** of the following:

15

- (a) Write the steps to configure squid.
- (b) Explain how to optimize samba service?
- (c) Write the purpose of various NTP utility programs.
- (d) List options of the global section of samba configuration file. Also write the purpose of each.
- (e) List the secure services and explain them with suitable example if any.
- (f) Explain the scp and sftp services with suitable example.

5. Attempt **any three** of the following:

15

- (a) List and explain different types of Domain Name Servers.
- (b) Explain the working of POP3 and IMAP.
- (c) Explain any five directives of vsftpd.conf file.
- (d) Give example of zone file. Explain
- (e) List key components that are essential for email to work. Explain in short.
- (f) Write the advantages of vsftpd.

6. Attempt **any three** of the following:

15

- (a) Write the steps to configure mailman.
- (b) What is the purpose of MPM ? Explain different approaches to process creation and control.
- (c) Explain the directory block of httpd.conf file.
- (d) Write a SSI script that will display long listing of /root.
- (e) Explain the working of Apache web server.
- (f) Write a short note on content negotiation.

7. Attempt **any three** of the following:

15

- (a) List various commands used to manage the groups in Linux. Also write the purpose of each.
- (b) Explain how to optimize web service.
- (c) Explain with suitable example user creation using command.
- (d) Explain rpmquery command with options.
- (e) Explain with example how password of multiple users can be changed in a single operation.
- (f) What are the advantages of shadow password over traditional password system?