# UNIVERSITY PAPER

# T.Y.BSCIT

# SEM-V

# NOV.-2017

**Q.P. Code : 23202**

(Time: $2\frac{1}{2}$ hours)

Total Marks: 75

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 different principles of security.
   b.    List and explain different types of criminal attacks. Give example of each one.
   c.    List different transposition techniques. Explain any one with example.
   d.    A and B want to establish a secrete key using the Diffie-Hellman Kay Exchange protocol. Assuming the values as n=11,g=5,x=2 and y=3, find out the values of A,B and the secret key.

2.    **Attempt *any two* of the following:**                                                10
   a.    Explain cipher feedback mode.
   b.    Explain DES algorithm.
   c.    How subkey is generated for rounds of IDEA algorithm?
   d.    Explain the working of RC5.

3.    **Attempt *any two* of the following:**                                                10
   a.    Explain with example RSA algorithm.
   b.    Write down difference between symmetric and asymmetric key cryptography.
   c.    Explain how MD5 works.
   d.    What is message authentication code? Write down disadvantages of hash-based message authentication code.

4.    **Attempt *any two* of the following:**                                                10
   a.    List and explain various fields in a X.509 digital certificate version 3.
   b    What is need of self-signed digital certificates and cross certificate?
   c.    Write down the difference between online certificate revocation status checks and simple certificate validation protocol.
   d.    List and explain PKIX services.

5.    **Attempt *any two* of the following:**                                                10
   a.    Explain the purchase request transaction of SET.
   b.    List different email security protocols. Explain any one in detail.
   c.    Explain IP Datagram format.
   d.    List and explain different fields of security association database.

[TURN OVER]

6.   **Attempt *any two* of the following:**                                                    10
a.   What is authentication token? Explain how it works. Also list different types of
     authentication token.
b.   What is the use of smart cards? Write down the problems and their solutions related to
     smart card technology.
c.   Write a short note on Kerberos.
d.   Write a short note on one-way authentication.

7.   **Attempt *any three* of the following:**                                                  15
a.   List and explain different types of attacks.
b.   Explain how subkey is generated in blowfish algorithm.
c.   Write down difference between MD5 and SHA-1.
d.   List different public key cryptography standards. Explain any two of them.
e.   What is electronic money? Classify electronic money based on
     i.    Tracking of money
     ii.   Involvement of the bank in the transaction.
f.   List and explain different approaches to achieve SSO.

TYBSc IT          21/11/2017

**Q.P. Code : 23206**

(Time: $2\frac{1}{2}$ hours)

Total Marks: 75

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. What is an exception? Explain exception handling in C#.
   b. What is polymorphism? Explain runtime polymorphism in C#.
   c. What is the difference between for loop and foreach loop?
   d. Write short note on Common Language Runtime (CLR) in .NET.

2. **Attempt *any two* of the following:**                                                    10
   a. Differentiate between private assembly and shared assembly.
   b. Explain how garbage collection works in .NET.
   c. What is selector in CSS? Explain various types CSS selectors.
   d. What is .NET framework? Explain various components of .NET framework 4.0.

3. **Attempt *any two* of the following:**                                                    10
   a. List and explain the major events in global.asax file.
   b. What is the code behind and inline code?
   c. Write ASP.NET code to display selected elements from the CheckBoxList on a Label control. Elements on the label must be separated by a whitespace.
   d. Explain following properties of ListBox control
      (i) AutoPostBack  (ii) Items

4. **Attempt *any two* of the following:**                                                    10
   a. Write necessary properties which are common for all validation controls.
   b. What is ViewState? How it works in ASP.NET?
   c. Explain TreeView control in ASP.NET.
   d. Write ASP.NET code to send data entered in two textboxes from one web page to another web page. Display the data on two separate labels.

5. **Attempt *any two* of the following:**                                                    10
   a. What are the authentication modes in ASP.NET for security?
   b. What is the difference between ExecuteScalar and ExecuteNonQuery?
   c. Write a code to insert and update data into a SqlServer database from an ASP.NET web page.
   d. Explain DataAdapter class in ADO.NET?

6. **Attempt *any two* of the following:**                                                    10
   a. Write the basic syntax of a LINQ query in C#.
   b. What are the benefits using Ajax? Explain UpdateProgress control in Ajax.
   c. Write a code to display all the number in array greater than 10 using LINQ.
   d. Explain the use of document.ready() function in jQuery.

[TURN OVER]

7.    Attempt *any three* of the following:

a.    Explain switch statement. What is fallthrough in switch? Is fallthrough permitted in C#?

b.    How to create and use external style sheet using visual studio developer?

c.    Explain following two web server controls
      (i) LinkButton (ii) ImageButton

d.    What are cookies? Explain various properties of HttpCookie class.

e.    What is the authentication and authorization in ASP.NET?

f.    Write jQuery code to demonstrate the use of hide() and slideUp() functions on <p> element.

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Software testing

TYBSc IT - 22/10/2017

[Time: $2\frac{1}{2}$ Hours]                                                                    [ Marks:75]

Please check whether you have got the right question paper.

N.B:   1. **All** questions are **compulsory**.
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3. Answer 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**.

Q.1   Attempt **any two** of the following:                                                    (10)
   a. Define Software Testing. Why is it necessary?
   b. Explain the software testing principles.
   c. Compare and contrast the mindset of a tester and that of a developer.
   d. What is quality? Discuss the correlation between testing and quality.

Q.2   Attempt **any two** of the following:                                                    (10)
   a. Explain V-model.
   b. Explain the different test levels.
   c. Describe the purpose of confirmation testing and regression testing.
   d. Write a short note on maintenance testing.

Q.3   Attempt **any two** of the following:                                                    (10)
   a. Explain the difference between static and dynamic techniques.
   b. Explain the factors for successful performance of reviews.
   c. Describe the objective of static and list typical benefits of static analysis.
   d. Describe the importance and value of considering static techniques for the assessment of software work products.

Q.4   Attempt **any two** of the following:                                                    (10)
   a. Explain the characteristics of specification-based testing, structure-based testing and experience-based testing.
   b. Explain boundary value analysis with help of an example.
   c. Write short note on experienced based techniques.
   d. Define the concept and importance of code coverage.

**Q.5**   Attempt <u>any two</u> of the following:   (10)
  a.  Discuss the importance of independent testing.
  b.  Discuss the IEEE 829 standard Test Plan template.
  c.  Explain briefly the major types of test strategies that are commonly used.
  d.  Define the following: defect density, failure rate, test control, test coverage, test monitoring.

**Q.6**   Attempt <u>any two</u> of the following:   (10)
  a.  Classify different types of tests according to the process activates.
  b.  Summarize the potential benefits and risks of test automation and tool support for testing.
  c.  State the main principles of introducing a tool into an organization.
  d.  Define the following: debugging tool, driver, probe effect, data-driven testing, keyword-driven testing.

**Q.7**   Attempt <u>any three</u> of the following:   (15)
  a.  Explain briefly the fundamental test process.
  b.  Define COTS, verification, validation, stub and drivers.
  c.  Define the following: entry criteria, exit criteria, moderator, reviewer, scribe.
  d.  List the factors that influence the selection of the appropriate test design technique.
  e.  Write a short note on test monitoring.
  f.  State the goals of a proof of concept or piloting phase for tool evaluation.

(Time: 2½ hours)

Total Marks: 75

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(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 use of adapter class with suitable example.
b.   Explain Delegation Event model. What are two steps in using the java delegation event model?
c.   Explain the various Layout Managers available in AWT.
d.   Write AWT based Java program that will read a string from user and display the length of the string.

2.   Attempt *any two* of the following:                                                10
a.   Write a Java program using swing components that displays table containing student information (Name, Address, 10th %, 12th %, Emailed, Contact No.).
b.   What is use of JColorChooser? Write down the constructors and methods of the same.
c.   Distinguish Between AWT & JFC (Swing).
d.   Explain Root Pane, Glass Pane, Layered Pane, Content Pane and Desktop Pane.

3.   Attempt *any two* of the following:                                                10
a.   What are servlets? What are the advantages of servlet over CGI?
b.   What is Request Dispatcher? What are its two methods?
c.   Explain the ServletRequest interface of servlet API.
d.   Write a servlet program to display the factorial of a given number.

4.   Attempt *any two* of the following:                                                10
a.   List and explain the Directive tags of JSP.
b.   Explain JDBC architecture.
c.   Write the purpose of the following JDBC classes:
     i. DriverManager   ii. ResultSet   iii. Statement   iv. Connection
     v. PreparedStatement
d.   What are the advantages and disadvantages of Java Server pages?

5.   Attempt *any two* of the following:                                                10
a.   Explain Model-view-controller architecture.
b.   List various phases of JSF lifecycle. Explain in short.
c.   What is Facelet? Write the features of Facelet.
d.   Explain the benefits of EJB.

6.   Attempt *any two* of the following:                                                10
a.   Explain Architecture of Hibernate framework in detail.
b.   What is value stack in struts? State and exaplin the execution flow of value stack.
c.   Write a short on Interceptors in struts.
d.   Explain structure of hibernate.cfg.xml file.

[TURN OVER}

7.   Attempt *any three* of the following:                                                                    15
a.   What is CheckBoxGroup? Explain with Example.
b.   Write a java program to demonstrate the use of Tabbed Panes.
c.   What is the purpose of WEB-INF file? Explain.
d.   Write a JDBC program that inserts values in database. [table Name : Book, Fileds : Bookid, Title, Author, Publisher]
e.   What are the different types of enterprise beans? Explain.
f.   What is OGNL? Explain the execution flow of OGNL.

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TYBSc IT    24/11/17

Linux

**Q.P. Code : 23213**

(Time: 2½ hours)

Total Marks: 75

N. B.:   (1) **All** questions are **compulsory**.
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     (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 different Linux distributions? Explain each in brief.
b.   Explain the duty of the Linux system administrator in backing up and restoring files.
c.   Explain the booting process of the Linux operating system in detail.
d.   Explain the Extended 3 file system.

**2.**   **Attempt _any two_ of the following:**     **10**
a.   What are the different types of shells in Linux? Explain.
b.   Which are the network configuration files that are required to be changed while setting up a system or moving the system? Explain.
c.   What is Network file system? Explain in detail. Explain the two important NFS configuration files for using the features of NFSv4.
d.   What is dynamic host configuration protocol? How are DHCP server and client configured on Linux?

**3.**   **Attempt _any two_ of the following:**     **10**
a.   What is Samba? What is server message block? Explain
b.   How are samba users created? Explain with examples.
c.   What is timeserver? Why is it required? What are the different types of time servers? How is it configured?
d.   What is a caching proxy? What are the uses of a caching proxy server?

**4.**   **Attempt _any two_ of the following:**     **10**
a.   Discuss the http protocol and following daemons available in Linux: sshd, ftpd.
b.   How is xinetd server configured? Explain.
c.   Explain the nsswitch.conf and resolv.conf files. What are their uses?
d.   Explain the seven configuration statements used in named.ca file.

**5.**   **Attempt _any two_ of the following:**     **10**
a.   What is POP3? What is IMAP4? Explain and compare them.
b.   How is vsftpd run over SSL? What are the SSL-related configuration directives for vsftpd over SSL? Explain.
c.   How can anonymous ftp access be disabled in vsftpd? Explain.
d.   Explain the configuration process of Postfix mail server?

**6.**   **Attempt _any two_ of the following:**     **10**
a.   What are the changes in Apache 2.0 compared to Apache 1.x? Explain.
b.   Explain the userdel and usermod command with options and arguments.
c.   How can we build packages from source rpms? Explain the various valid build stages.
d.   What are the advantages of shadow passwords over traditional password system?

[TURN OVER]

**Attempt _any three_ of the following:**                                               15

Explain the RAID levels 0,1,5,6 and 10.

Explain the showmount command with options and example.

Explain in detail the configuration process of squid.

What are zone statements? Explain the different values for the zone statement.

What is vsftpd? Enumerate and explain its features and usability enhancements. What are the distinguishing features of ProFtpd?

Explain the AddHandler, AddLanguage, AddDefaultCharset and AddCharset directives.

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