T.Y.B.SC (IT) SEM-V ADVANCED JAVA (JAN- 2020)

(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 JTable component with suitable example.
b. What is CGI? What are the disadvantages of CGI?
c. Explain life cycle of Java Server Pages with suitable diagram.
d. Explain MVC Architecture. List its advantages.

2. **Attempt _any three_ of the following:** 15
a. What are the different types of layout manager used in Swing? Explain any one layout manager.
b. Enlist various event classes and event listeners. Explain ItemEvent and ItemListener.
c. Explain the new features of JFC.
d. How do divide frame window in 2 parts? Explain with code specification.
e. What is JTree in swing? Write a java SWING program that creates the JTree GUI.
f. Write a java program to handle mouse related event.

3. **Attempt _any three_ of the following:** 15
a. Explain methods of RequestDispatcher interface.
b. What is the need of dynamic servlet in Java?
c. Explain the servlet life cycle.
d. What are HTTPServletRequest and HTTPServletResponse? Explain.
e. Explain the ServletConfig and HttpSession interface in java.
f. Write a servlet program to perform user authentication. If the username and password are correct then display the message "Hello <username >" else "login failed".

4. **Attempt _any three_ of the following:** 15
a. What is JSP? What are the advantages of JSP?
b. What are the different types of directives in JSP? Explain.
c. Explain the implicit objects of JSP.
d. List the steps to connect to the database using JDBC. Elaborate with example.
e. Explain JDBC architecture with suitable diagram.
f. Write a JSP application that computes the square of the numbers from 10 to 20.

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

a What are the various features of facelets? Explain.

b What is Java Server Faces? State its components.

c What are the different types of enterprise beans? Explain.

d What are EJBs? Give its advantages.

e Enlist the various phases in the life cycle of JSF. Explain any two phase in detail

f Write a session bean code specification that calculates simple interest. Accept principal, rate and time from the user.

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

a. What is Hibernate? Explain the features of Hibernate.

b. What is the importance of hibernate mapping file? Explain with suitable example

c. Enlist different components of Hibernate and explain them.

d. What are actions in struts? Explain with examples.

e. What are the different features of Struts? Explain.

f. Write a short note on interceptors in struts.

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

a. Explain basic lookup in JNDI.

b. What is a Naming service? Explain.

c. What are different protocols used in JavaMail API. Explain.

d. Explain the components of web services.

e. Enlist and explain any 5 JavaMail API core classes.

f. Explain the significance of JNDI.

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T.Y.B.SC (IT) SEM-V
ASP NET WITH C #
(JAN- 2020)

(3 Hours) [Total Marks: 100]

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

1.	**Attempt *any two* of the following:**	**10**
a.	What is need of CSS? Explain in detail.	
b.	Explain any five properties of TextBox control.	
c.	Write a short note on LINQ.	
d.	Explain class and object in C#.	

2.	**Attempt *any three* of the following:**	**15**
a.	Explain the components of assembly in detail.	
b.	Write a short note on interface of C#.	
c.	Explain different data types in C#.	
d.	Explain use of relational and arithmetic operators in C#.	
e.	Explain use of Garbage Collector.	
f.	Explain method overloading with an example.	

3.	**Attempt *any three* of the following:**	**15**
a.	Explain Button control with its five properties.	
b.	Explain menus and Toolbars of windows application.	
c.	What is delegate? Explain with an example.	
d.	Explain List Box control with its five properties.	
e.	Explain Checkbox control with its five properties.	
f.	What are different types of collections in .NET? Explain.	

4.	**Attempt *any three* of the following:**	**15**
a.	Explain use of configuration files of ASP.NET.	
b.	Explain the use of cookie with an example.	
c.	List and explain events of Global.asax file.	
d.	Write a short note on Microsoft .NET Framework..	
e.	Explain ASP.NET page life cycle.	
f.	Explain Dropdown List control with an example in ASP.NET.	

5.	**Attempt *any three* of the following:**	**15**
a.	What is use of RequiredField validation control? Explain with its property.	
b.	What is use of RegularExpression validation control? Explain with its property.	
c.	What is difference between ASP.net web page and master page?	
d.	Explain sitemap control in ASP.NET.	
e.	What is use of TreeView control in ASP.NET?	
f.	Define variable and explain rules of variable declaration.	

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6. **Attempt *any three* of the following:** 15
a. Write a short note on crystal report.
b. Difference between connected and disconnected Architecture of ADO.NET.
c. Explain operators in LINQ.
d. What is GridView control? Explain how to enable row selection, paging, sorting features of GriedView.
e. Explain Authentication of ASP.NET security.
f. Explain ASP.NET provider model.

7. **Attempt *any three* of the following:** 15
a. Explain the use of web services of ASP.NET.
b. Explain use of UpdateProgress Control in AJAX.
c. What are features of AJAX?
d. Explain page methods in AJAX websites.
e. Explain various effects with JQuery.
f. Explain use of UpdatePanel Control in AJAX.

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T.Y.B.SC (IT) SEM-V
LINUX ADMINISTRATION
(JAN- 2020)

(3 Hours) [Total Marks: 100

N. B.: (1) **All** questions are **compulsory**.
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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 ways of enabling and disabling services in Linux.
b. Explain working of web server.
c. Explain cron files.
d. Write a short note on SMTP.

2. **Attempt *any three* of the following:**
a. What is bootloader? Explain GRUB bootloader.
b. Write a short note on rc scripts.
c. Explain ext3 file system.
d. Explain proc virtual file systems.
e. Explain logical volume manager.
f. Explain various duties of system administrator.

3. **Attempt *any three* of the following:** 15
a. Explain the logrotate.conf file.
b. Explain various files changes required when setting up a system.
c. Explain the process of configuring DHCP server and client.
d. Explain configuring IP masquerading.
e. Explain NFS server and client security considerations.
f. Explain various NFS server daemons.

4. **Attempt *any three* of the following:** 15
a. Explain global section of Samba configuration file.
b. Explain various ways of connecting to Samba client.
c. Explain the process of configuring a time server.
d. Explain configuration of Squid proxy server.
e. Explain various less secure services in Linux.
f. Explain configuring xinetd server.

5. **Attempt *any three* of the following:** 15
a Explain various components of email delivery process.
b Explain features of vsftpd configuration file.
c Explain various ways of providing email security.
d Explain types of DNS servers.
e Explain options and logging configuration statements in name.conf file.
f Explain configuring primary DNS server.

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6. **Attempt *any three* of the following:** 15
a. Explain features of Apache.
b. Explain global directives of Apache.
c. Explain enabling Apache using PHP.
d. Explain the configuration of mailman.
e. Explain various tags in creating a feed file.
f. Explain various administrative tasks of mailman.

7. **Attempt *any three* of the following:** 15
a. Explain optimizing FTP services.
b. Explain useradd command with various options.
c. Explain usermod command with example.
d. Explain options in verifying RPMs.
e. Explain steps to upgrade kernel.
f. Explain optimizing mail services.

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T.Y.B.SC (IT) SEM-V
NETWORK SECURITY
(JAN- 2020)

(3 Hours) [Total Marks: 100]

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1.	**Attempt _any two_ of the following:**	**10**
a.	Define Plain Text and Cipher Text with an example.	
b.	Differentiate between Active attack and Passive attack.	
c.	Write a short note on Symmetric Key Cryptography.	
d.	Explain the principles of security.	

2.	**Attempt _any three_ of the following:**	**15**
a.	Explain cryptosystem with a block diagram.	
b.	Explain Transposition Cipher with an example.	
c.	Explain the principle of Data Encryption Standards.	
d.	What is Public Key Cryptography? Explain in detail.	
e.	Write a short note on Cryptanalysis.	
f.	Explain any two DES modes of operation.	

3.	**Attempt _any three_ of the following:**	**15**
a.	Explain ElGamal Signature Scheme.	
b.	What is the concept of Digital Signature	
c.	Describe Diffie Hellman Key Exchange algorithm	
d.	What is collision? Explain Birthday Attack in detail.	
e.	What is Fail-Stop Signature?	
f.	Write a short note on Message Digest	

4.	**Attempt _any three_ of the following:**	**15**
a.	Explain the concept Threat, Vulnerability and Attack.	
b.	Explain model for Network Security with a block diagram.	
c.	Explain the terms. a) Integrity b) Access Control	
d.	Write a short note on OSI Security Architecture.	
e.	Explain different types of Active Attacks.	
f.	What are the different security services of X.800?	

5.	**Attempt _any three_ of the following:**	**15**
a	Explain the requirements of Kerberos Authentication System.	
b	Explain functionality of S/MIME protocol in detail.	
c	Write a short note on PGP services.	
d	Explain the format of X.509 standard certificate.	
e	Explain key elements of PKIX Architectural model.	
f	Write a short note on Password Authentication	

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6. **Attempt _any three_ of the following:** 15
a. Write a short note on Key Management.
b. Explain ESP packet format.
c. Who are the different participants and features of SET protocol?
d. Explain the services of SSL Record Protocol?
e. What are the different applications of IPSec
f. Write a short note on Transport Layer Security.

7. **Attempt _any three_ of the following:** 15
a. Explain Distributed Intrusion Detection System.
b. Explain Life cycle of Virus.
c. Explain different Malicious Programs.
d. Explain Password Selection Strategy.
e. Write a short note on Antivirus Software
f. Explain Application-level gateways.

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Object Code: 71303 / Software Testing.

(3 Hours) [Total Marks: 100]

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1. **Attempt _any two_ of the following:** 10
a. Explain Decision Table testing.
b. Discuss the template for Test Planning.
c. State and explain the levels of testing.
d. Write a note on Acceptance Testing.

2. **Attempt _any three_ of the following:**
a. Discuss the principles of Software Testing.
b. Explain the concept of VV Model.
c. State and explain the different Quality factors.
d. Differentiate between Software Quality Assurance and Software Quality Control.
e. Explain White Box testing technique.
f. Briefly explain the components of Quality..

3. **Attempt _any three_ of the following:** 15
a. Explain Requirement Traceability Matrix.
b. Differentiate between Boundary Value Analysis and Equivalence Partitioning.
c. Explain Retrospection with Reference to Functional Testing.
d. Discuss the types of Equivalence Class Testing.
e. Explain the advantages of Functional Testing.
f. Briefly explain the importance of Requirement testing in performance to Functional Testing.

4. **Attempt _any three_ of the following:** 15
a. Discuss the advantages and disadvantages of Structural Testing.
b. Explain Data Flow Testing.
c. Write a note on Path-Testing Coverage Metrics.
d. Explain with an example Cyclomatic Complexity.
e. Explain the features of Metric Bases Testing.
f. Briefly explain DD path and DD path graphs.

5. **Attempt _any three_ of the following:** 15
a Justify why Integration testing is a crucial phase of testing process.
b Explain Unit testing. List the objectives of Unit Testing.
c Briefly discuss the advantages of Bottom up approach.
d Explain the concept of Stubs and Drivers.
e Write short note on Big Bang Integration.
f Define System Testing. Briefly explain the types of System testing.

6. **Attempt *any three* of the following:**   **15**
a. Discuss the essential components of Object Oriented Testing.
b. What are the advantages of State Transition Testing?
c. Write short note on Control Flow Testing.
d. Differentiate between Object Oriented software testing and Conventional Testing.
e. Discuss the features of Object Oriented software testing.
f. What is System Testing? Explain its advantages.

7. **Attempt *any three* of the following:**   **15**
a. State and explain the Statistical tools used in Qualitative Analysis.
b. Justify the need for Test Process Improvement.
c. Explain the different types of Test Reports.
d. Write short note on Qualitative Analysis.
e. Explain the steps for Test Process Improvement.
f. Discuss the guidelines for developing a Test Plan.

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