SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology
Second Year, Second Semester Examination – 2015
HNDIT2411- Enterprise Architecture

Instructions for Candidates:	No. of questions : 06
Answer Five (05) questions.	No. of pages : 04
	Time : 03 hours

QUESTION 01

I. State three different computing paradigms currently known in the software industry.

[03 Marks]

II. Define "**Service Oriented Architecture**". [03 Marks]

III. List down the key characteristics of Service Oriented architecture. [04 Marks]

IV. Differentiate between SOA and Web service. [04 Marks]

V. "Service Oriented Computing encompasses revolutionary software solutions for the highly dynamic modern business world" Do you agree with this statement. Explain your answer. [06 Marks]

QUESTION 02

I. What is Concurrency? [02 Marks]

II. Name two methods that can be used to implement a Thread in Java? [02 Marks]

III. Explain what is Thread Scheduling? [02 Marks]

IV. Consider the given scenario and write sample code segments for the following six steps. Assume that you are using a MySql database for the following operations. Database name is " **Library**" it has a table named "**Book**". Details of Book table as follows: Book (bid: string, bname:string, aid:String, no_page: integer, price:float, isbn:integer). Assume this table already contains records.

    a. Load the JDBC Driver. [02 Marks]

    b. Establish the Database Connection. [02 Marks]

    c. Create a Statement Object. [02 Marks]

d. Insert one data record to Book table.   [02 Marks]

e. Display values of bname, no_page and price   [04 Marks]

f. Close the Connection   [02 Marks]

QUESTION 03

I. What is "Servlet"?   [02 Marks]

II. What do you mean by Servlet Container? List common tasks performed by Servlet Container.   [04 Marks]

III. Define "Deployment Descriptor".   [02 Marks]

IV. Briefly describe the term "Session management in servlet". What are the different methods of session management in servlets?   [06   Marks]

V. Assume you have provided following index.html file for collecting user name.

User Name [ ] submit	`<form method="post" action="Hello">` User Name `<input type="text" name="txtUser"> ` `<input type="submit" value="submit">` ` ` `</form>`

Write the code for java Servlet which collect the request and display user name.

[06 Marks]

QUESTION 04

I. Briefly explain the advantages of using JSP over Servlets in web application development?   [04 Marks]

II. What is difference between GET and POST method in HTTP protocol? In which situation does we use doPOST () then?   [04 Marks]

III. Consider the following index.html file which take user name and password.

```
<html>
      <head>
          <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
          <title>JSP Page</title>
```

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```
                    </head>
                    <body>
                            <form method="post" action="Validate.jsp">
                                    User Name <input type="text" name="txtUser" ><br>
                                    Password <input type="text" name="txtPwd" ><br>
                                    <input type="submit" value="submit"><br>
                            </form>
                    </body>
        </html>
```

JSP Page
User Name [   ]
Password [   ]   submit

a. Write a JSP code to get the user name and password through request object at the server side   [02 Marks]

b. Write a JSP code to check whether the user name or password are blank or not.

[02 Marks]

c. Write a JSP code to check the user name = 'admin' and password ='abc@123'

[02 Marks]

IV.   Briefly describe the three types of Enterprise Java Beans.   [06 Marks]

QUESTION 05

I.   What are the major the differences between XML and HTML.   [02 Marks]

II.   Why do we use a DTD in XML?   [02 Marks]

III.   Briefly explain the term "XML Parser". Give 2 examples for Java XML parsers.

[04 Marks]

IV.   What do you mean by Valid XML Document   [02 Marks]

V.

a.   Write XML code that describes the given scenario.

The root element is Vehicles. The VEHICLE element must contain one each of items MODEL, REGNO, COLOR, and BRAND in order. The VEHICLE element may contain an attribute called "transmissiontype" which may have a

value of "Auto" or "Manual". The elements MODEL, REGNO, COLOR, and BRAND all contain PCDATA which is parsed character data.

Note: Vehicle may have multiple colors

[05 Marks]

b.   Design the DTD file for the above XML document.   [05 Marks]

QUESTION 06

I.   Briefly describe the MVC Architecture.   [05 Marks]

II.   Define the term "Web Application Framework"   [03 Marks]

III.   Why do you use frameworks in web application development? [04 Marks]

IV.   Briefly explain any two frameworks given below. Indicate at least two benefits of each.

[2*4=08 Marks]

a.   Spring

b.   Struts 2

c.   Hibernate