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 – 2019

IT2411 - Enterprise Architecture

Instructions to Candidates:	Time: Three Hours (03)
Answer five (05) questions only.	No. of Pages :04
All Questions carry equal marks	No of Question :06

Q1

i). Define the term **Computing Paradigm**? (04 Marks)

ii). List 4 elements in Service-Oriented Computing. (04 Marks)

iii). Compare Object Oriented Computing and Service Oriented Computing in terms of "**Code sharing and reuse**". (06 Marks)

iv). Briefly explain the reasons for replacing RPC protocol with SOAP. (06 Marks)

Q2

i). A Web Services Description Language (WSDL) document describes a web service using major elements. Name and explain two of them. (04 Marks)

ii). Explain 3-tiered architecture? (04 Marks)

iii). In Java, there are the two methods which can be used to implement threads. Name each method. (06 Marks)

iv). Explain Thread State diagram. (06 Marks)

Q3

i). Sate usage of the Prepared Statement in SQL. (04 Marks)

ii). State the different between executeQuery() and executeUpdate() methods in Statement Object (JDBC). (04 Marks)

iii). Consider the given scenario. Assume that you are using mysql database. Database name is SLIATE. Student is one of the table in that database.

Student

Reg No	Name	ContactNo	Address	Gender	Age	GPA
1111	C.D. Perera	0372228222	Kurunegala	M	20	3.9
1114	N.S. Bandara	0812234567	Kandy	F	20	3.8
1115	K. Peris	0112876655	Colombo	M	21	3.0

Write sample code segments to display all details of students whose GAP is grater that 3 using following six steps.

a) Load the JDBC Driver
b) Establish the Database Connection
c) Create a Statement Object
d) Execute a Query
e) Process the Results
f) Close the Connection

(12 Marks)

Q4

i). Explain what the Model View Controller (MVC) is.

ii). Name the framework which used following concepts.   (04 Marks)

   a) Make J2EE development easier to use and promotes good programming practices by enabling a POJO-based programming model.
   b) An Object-Relational Mapping (ORM) solution for JAVA.

iii). Consider the index.html, which generate a form with three text inputs Group   (04 Marks)
(name of the text field–txtg), Date (name of the text field - txtd) and Tme
(name of the text field –txtt), and a submit button. Data are passed into
RegSch servlet. In the servlet three parameter values are display. Fill the
blanks in REgSch servlet.

```
try (PrintWriter out_= response.getWriter()) {
    out.println("<!DOCTYPE html>");
    out.println("<html>");
    out.println("<head>");
    out.println("<title>Servlet RegSch</title>");
    out.println("</head>");
    out.println("<body>");


    String gtxt,dtxt,ttxt;
    gtxt=..................(a)..............
    dtxt=..................(b)..............
    ttxt=..................(c)..............

    out.println("<h1> "+ .........(d).........+"</h1>");
    out.println("<h1> "+ .........(e).........+"</h1>");
    out.println("<h1> "+ .........(f).........+"</h1>");
```

iv). Following code segments are taken from two servlet files called servlet1   (06 Marks)
and servlet2. In servlet1, create a cookie and pass that value to servlet2.
Then in sevlet2 display value in cookie. Fill the blanks in given codes.

servlet1

```
    String v= "SLIATE";
    Cookie c1=new ..................(a)..........
    response. ..................(b)..........
```

servlet2

```
    Cookie ck[]= ..................(c)..........
    out.print("Hello "+ck[0]..........(d).......
```

(06 Marks)

Q5

i). Name two main categories of JSP elements? (04 Marks)

ii). Briefly explain what is an Enterprise Bean? (04 Marks)

iii). Assume that you have provided index.html file for collecting First name, and Last name. Following JSP code which collect the request and display the full name. Fill the blanks. Note: in index.html, two text filed are named as **txtFname and txtLname.** In JSP, If any parameter is empty display "Welcome" Otherwise display full name.

```
<%
        String fn=...............(a)...............
        String ln=...............(b)...............
if (fn.isEmpty() || ln.isEmpty())
        {
                ...............(c)...............
        }
else
        {
        String FullName= ...............(d)...........
        out.print(FullName);
        }
%>
```
(06 Marks)

iv). Write output of following JSP code.

```
<body>

        <% out.println("SLIATE"); %>
        <br>

        <%= "HNDIT"%>
        <br>
        <%-- HNDIT --%>
        <br>

        <% String name = null;
           if (name == null)
           { %>
        <h3>Please supply a name</h3>
           <% }
           else
           { %>
        <h3>Hello <%= name %></h3>
        <% } %>
</body>
```
(06 Marks)

Q6

i). Explain the term **XML passer.** (04 Marks)

ii). State two ways that you can define DTDs. (04 Marks)

iii). Create a XML file for following scenario.

Booklist has details of **book**. Book has a **topic** as an attribute. Book has titile, author and price. Author has first-name and last-name. A book may has many authors. Create a XML file to keep following data set.

Book	Title	Author		Author		Price
		First-Name	Last-Name	First-Name	Last-Name	
topic="software"	Rapid Development	Steve	McConnell	Bryan	Syverson	48.99
topic="UML"	UML Distilled	Martin	Fowler			34.99

(06 Marks)

iv). Create a DTD file for above scenario. Title, first-name, last-name and price consider as PCDATA (06 Marks)