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 – 2020

IT2411 - Enterprise Architecture

Instructions to Candidates:

Answer five (05) questions only.

All Questions carry equal marks

Time: **Three Hours (03)**

No. of Pages   :04

No of Question   :06

Q1

i).   Name 2 **Computing Paradigm**?   (04 Marks)

ii).   List 2 elements in Service-Oriented Computing.   (04 Marks)

iii).   Compare Object Oriented Computing and Service Oriented Computing in terms of "**System Maintenance**".   (06 Marks)

iv).   Explain what is Service oriented Computing   (06 Marks)

     (20 Marks)

Q2

i).   Briefly explain following terms

     a.   Process

     b.   Thread   (04 Marks)

ii).   The following java program create 6 threads. Main Thread and 5 child threads. Each child Thread sleep for a random time between 0 and 10 seconds and print that they are running and go to sleep again. Fill the blanks

```java
class Thread01 extends ......(a)..... {
    int threadID;
    public Thread01(int a){
            threadID = a;
    }
    public static void main(String args[]) {
        for (int i=1; i<6; i++)              {
            .................(b)....................
            System.out.println("Thread "+i+" created");
            t.start();
            System.out.println("Thread "+i+" started");
        }
        System.out.println("Main Thread exit");
    }
    public void run()      {
        while(true) {
            System.out.println("Thread "+threadID+" running");
            try{Thread.sleep((int)........(c) ...............      }
        catch (InterruptedException e){        }              } }      }
```

     (06 Marks)

iii). Explain 3-tiered architecture ?   (04 Marks)
iv). Briefly explain following terms
    a- Soap
    b- Web Services Description Language
    c- Web Service (W3C Definition)   (06 Marks)
                                                                           (20 Marks)

Q3
i). Explain following method used in JDBC
    a. executeQuery()
    b. executeUpdate()   (06 Marks)

ii). You are system developer for application software create for ATI. You are using mysql database name ATI. Employee is one of the table in that database. Table structure show follow:

Employee(EID, name, mobileNo, Address, Gender)

Write sample code segments to display name and address of female employees in 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   (14 Marks)
                                                                           (20 Marks)

Q4
i). Explain following frameworks
    a. Model View Controller (MVC)
    b. Hibernate   (06 Marks)
ii). Consider the given index.html, which input values of a user through a form and passed them to REgSch servlet . In the servlet parameter values are display. Fill the blanks in given REgSch servlet.

User Input Form

Personal information

Name:

Password:

Gender: Male male ⦿ Female

Age: 1 to 99 years old ⌄

Languages

☐ Java ☐ C/C++ ☐ C#

Instruction

"Enter your Instruuction here"

Send   Clear

2

```
        out.println("<body>");
        String name=......(a).............("txtname");
        ..................(b).........................
        ..................(c)........................
        String ...................(d)................
        out.println("User Enterd is: "+ pw);
        out.println("<br>");
        String ...................(e)................
        out.println("User Enterd gender value is: "+ gender);
        out.println("<br>");
        String age=request.getParameter("selAge");
        out.println("User Enterd age value is: "+ age);
        out.println("<br>");
        String ...................(f)................
        out.println("User Enterd age value is: "+ lanu);
        out.println("<br>");
        String inst=request.getParameter("txtaIns");
        out.println("User Enterd age value is: "+ inst);
        ..................(g)........................
        out.println("</html>");
    }
```

(14 Marks)

(20 Marks)

Q5

i). JSP has declaration tag and scriptlet tags. Which tag can be used to declare methods in jsp? (04 Marks)

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

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

```
<%
        String name =..............(a).................
        String address=..............(b)................
    if (name.isEmpty() || address.isEmpty())
        ...............(c)...................
    else  {
            out.print(name);
            out.print(address);
        }    %>
```

(06 Marks)

iv). Write output of following JSP code.

```
        <%!
        int areSquear(int n){
            return n*n;
        }
        %>
<%= "Are of a Squear with size 5 is: "+areSquear(5) %>
```

(06 Marks)

(20 Marks)

3

Q6

i).   Name 2 properties of well formed XML   (04 Marks)

ii). Name four components of XML   (04 Marks)

iii). Create a XML file keep following details of employee.

Name	Address	Telephone		Salary
		Home	Mobile	
Amal"	Colombo 5	O111234567	0771234567	65000

                                                                          (06 Marks)
iv). Create a DTD file for above xml.   (06 Marks)
                                                                          (20 Marks)