SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER-VI • MID SEMESTER-I EXAMINATION – SUMMER 2016

SUBJECT: Software Engineering (2160701) (CE/IT)

DATE: 22-02-2016 TIME:2:00 pm to 03:15 pm TOTAL MARKS:30

Instructions: 1. All the questions are compulsory.  
2. Figures to the right indicate full marks.  
3. Assume suitable data if required.

Q.1 (a) What is Software? Explain it’s Characteristics. [03]  
(b) Difference between function oriented and object oriented approaches to software design. [03]  
(c) List out any Four Software Design Principles. [02]

Q.2 (a) Explain RAD model. [05]  
(b) Difference Between Incremental Model and Spiral Model. [04]  
(c) What do you mean by Agile? Explain any one Agile Model. [02]

OR

Q.2 (a) Explain Prototype model. [05]  
(b) Explain SDLC in brief. [04]  
(c) Explain any five Agile Principles. [02]

Q.3 (a) Define module coupling and cohesion. Explain different types of coupling and cohesion. [06]  
(b) Draw DFD for Library Management System. [05]

OR

Q.3 (a) Explain White Box testing and Black Box testing with it’s advantages and disadvantages. [06]  
(b) Draw DFD for Hospital Management System. [05]
SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VI • MID SEMESTER-I EXAMINATION – SUMMER 2016

SUBJECT: Computer Graphics (2160703) (CE)

DATE: 26-02-2016 TIME: 02:00 pm to 03:15 pm TOTAL MARKS: 30

Instructions:
1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1 (a) Explain the following terms:
5. Dominant frequency  6. Saturation

(b) Derive and explain DDA line drawing algorithm. Also explain the pros & cons of DDA. [03]

Q.2 (a) Explain scan line polygon filling algorithm with example. [06]
(b) Explain RGB color model. Explain difference between RGB and CMY color model. [05]

OR

Q.2 (a) Explain the working of Cathode Ray tube with diagram. [06]
(b) Derive all formulas for mid-point circle drawing algorithm. [05]

Q.3 (a) Explain the principle of Bresenham’s line drawing algorithm.
Digitize a line having endpoints as (0, 0) & (6, 4) using Bresenham’s line drawing algorithm. [07]

(b) Write a short note on diffuse reflection and specular reflection. [04]

OR

Q.3 (a) Explain followings:
1. DVST  2. Shadow Mask Technique
(b) Explain boundary fill method for polygon filling. [07] [04]
SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VI· MID SEMESTER-I EXAMINATION – SUMMER 2016

SUBJECT: THEORY OF COMPUTATION (2160704) (CE)

DATE: 24-02-2016 TIME: 02:00 pm to 03:15 pm TOTAL MARKS: 30

Instructions:
1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1 (a) Using Principle of Mathematical Induction, prove that for every n >= 1, 7 + 13 + 19 + . . . + (6n + 1) = n(3n + 4) [04]
(b) Write Regular Expressions for the following languages of all strings in {0,1}*
   (i) Strings that begin or end with 00 or 11 [02]
   (ii) The language of all strings that do not end with 11.
   (c) What is meant by “one to one” and “onto” function? Check whether function f: R ---> R^+, f(x) = x^2 is one to one and onto. [02]

Q.2 (a) Draw an FA recognizing the corresponding language. [02]
   i. The string in {0,1}^* ending in 10 or 11.
   (b) Minimize the following DFA (If Possible). [04]
   (c) Compare FA, NFA and NFA^-^.
      For following NFA find minimum FA accepting same language [05]

OR

Q.2 (a) Draw an FA recognizing the corresponding language. [04]
   i. (a + b)^* baaa.
   ii. (0 + 1)^* 0.
(b) For following FA find minimum FA accepting same language:

![](image)

(c) Give proof by contradiction: To Prove: For any sets A, B and C, if $A \cap B = \emptyset$ and $C \subseteq B$, then $A \cap C = \emptyset$.

Q.3 (a) Draw Finite Automata (FA) for following languages:

- $L_1 = \{x \mid 00$ is not a substring of $x\}$
- $L_2 = \{x \mid x$ ends with $01\}$

Find FA accepting the language (i) $L_1 - L_2$ and (ii) $L_1 \cap L_2$

(b) Convert NFA-$\lambda$ to NFA and DFA. Initial State: A, Final State: D

<table>
<thead>
<tr>
<th>Q</th>
<th>$\delta(q, \lambda)$</th>
<th>$\delta(q, 0)$</th>
<th>$\delta(q, 1)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>{B}</td>
<td>{A}</td>
<td>\emptyset</td>
</tr>
<tr>
<td>B</td>
<td>{D}</td>
<td>{C}</td>
<td>\emptyset</td>
</tr>
<tr>
<td>C</td>
<td>\emptyset</td>
<td>\emptyset</td>
<td>{B}</td>
</tr>
<tr>
<td>D</td>
<td>\emptyset</td>
<td>{D}</td>
<td>\emptyset</td>
</tr>
</tbody>
</table>

OR

Q.3 (a) Let $M_1$ and $M_2$ be the FAs pictured below, recognizing languages $L_1$ and $L_2$ respectively.

Draw the FAs recognizing the following languages:

- $L_1 \cap L_2$
- $L_2 - L_1$
- $L_1 \cup L_2$

(b) Define $\delta^*$ for NFA-$\lambda$. Also Calculate $\delta^*(1, ba)$ and $\delta^*(1, baab)$ from the following transition table.

<table>
<thead>
<tr>
<th>Q</th>
<th>$\delta(q, a)$</th>
<th>$\delta(q, b)$</th>
<th>$\delta(q, \lambda)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>{5}</td>
<td>\emptyset</td>
<td>{4}</td>
</tr>
<tr>
<td>2</td>
<td>{1}</td>
<td>\emptyset</td>
<td>\emptyset</td>
</tr>
<tr>
<td>3</td>
<td>\emptyset</td>
<td>{2}</td>
<td>\emptyset</td>
</tr>
<tr>
<td>4</td>
<td>\emptyset</td>
<td>{7}</td>
<td>{3}</td>
</tr>
<tr>
<td>5</td>
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<td>\emptyset</td>
<td>{1}</td>
</tr>
<tr>
<td>6</td>
<td>\emptyset</td>
<td>{5}</td>
<td>{4}</td>
</tr>
<tr>
<td>7</td>
<td>{6}</td>
<td>\emptyset</td>
<td>\emptyset</td>
</tr>
</tbody>
</table>
Enroll. No. ______________

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VI • MID SEMESTER-I EXAMINATION – SUMMER 2016

SUBJECT: ADVANCED JAVA (2160707) (CE/IT)

DATE: 23-02-2016 TIME: 02:00 pm to 03:15 pm TOTAL MARKS:30

Instructions: 1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1 (a) Enlist the methods of URL class. [01]
(b) Write a web application using servlet to compute an area of a circle. Get the radius from the client.[with web.xml file] [05]
(c) Describe Type-4 JDBC driver in details. [05]

Q.2 (a) What is Socket and ServerSocket class with example. [05]
(b) What is JDBC? List the various types of JDBC Driver. Write merits and demerits. [05]
(c) Enlist types of session tracking techniques. [01]

OR

Q.2 (a) What is datagram socket? Explain it with example. [05]
(b) Write code to insert three records into student table using PreparedStatement (assume student table with Name, RollNo, and Branch field). [05]
(c) Difference between ServletContext and ServletConfig. [01]

Q.3 (a) Discuss Servlet life cycle methods in brief with Counter incremental example. [07]
(b) Write Short note on PreparedStatement with suitable example. [04]

OR

Q.3 (a) Develop any Servlet application which demonstrates use of session management.[using HttpSession] [07]
(b) Write Short note on Callable statement with suitable example. [04]
SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VI • MID SEMESTER-I EXAMINATION – SUMMER 2016

SUBJECT: WEB TECHNOLOGY (2160708) (CE/IT)

DATE: 25-02-2016 TIME: 02:00 pm to 03:00 pm TOTAL MARKS: 30

Instructions: 1. All the questions are compulsory.
         2. Figures to the right indicate full marks.
         3. Assume suitable data if required.

Q.1  (a) Explain HTTP request and HTTP response in detail. [03]
(b) Explain the following tags with example. [03]
    1) <ul> 2) <optgroup> 3) <a>
(c) Explain browser compatibility issue and its possible solution. [02]

Q.2  (a) Design a simple registration form which contains input elements like Textbox, Password, RadioButton, Checkbox & Button. [05]
(b) Justify it:" HTTP is called as stateless protocol". [03]
(c) Explain frames and frame sets. [03]

OR

Q.2  (a) Enlist and explain the website design principles. [05]
(b) Design below Table. [05]

<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Subject</th>
<th>Contact No.</th>
<th>Email ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CG</td>
<td>7878787878</td>
<td><a href="mailto:aa@gmail.com">aa@gmail.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Dot Net</td>
<td>9898989898</td>
<td><a href="mailto:bb@gmail.com">bb@gmail.com</a></td>
</tr>
</tbody>
</table>

(c) What is use of <fieldset>? [01]

Q.3  (a) Write PHP and HTML code to upload file. [06]
(b) Explain OOP concept with PHP. [05]

OR

Q.3  (a) What is cookie and session in PHP? How to create and destroy it? [06]
    Explain PHP arrays.
(b) How to read and write file in PHP? Explain with example. [05]
Q.1 (a) Explain .Net Framework Architecture in Detail with figure. [05]
(b) Define 1) MSIL 2) CLS 3) CTS. [03]

Q.2 (a) Explain the Life Cycle of ASP.NET Pages. [06]
(b) Explain following Terms:
    1) Namespace 2) Garbage collection. [05]

OR

Q.2 (a) Explain Reflection API with Example. [05]
(b) Explain Validation Control With Example. [06]

Q.3 (a) What is inheritance? Create C#.NET console application to define shape class and derive circle and rectangle from it to demonstrate inheritance. [06]
(b) Explain Rich Server Control With Example. [05]

OR

Q.3 (a) Write a program to insert the data (FirstName,LastName,Gender,City) into Database in ASP.NET C#. [06]
(b) What is Constructor? Explain with example. [05]