Time: 3 Hours   **Marks: 80**

N.B.   1. Question no.1 is compulsory.
2. Attempt any 3 questions out of remaining 5 questions.
3. Figures to the right indicate full marks.
4. Assume suitable data wherever necessary.

Q.1	a)	Compare NOS and DOS	**[5]**
	b)	What is CORBA and explain types of method invocation in CORBA.	**[5]**
	c)	What are Roles in EJB?	**[5]**
	d)	Explain Service Oriented Architecture (SOA) lifecycle with a diagram.	**[5]**
Q.2	a)	Define Happened- Before Relationship. Explain implementation of logical clocks with an example.	**[10]**
	b)	Describe various transparencies in distributed system.	**[10]**
Q.3	a)	Explain migration in Heterogeneous system.	**[10]**
	b)	Describe the need for coordinator in distributed system. Demonstrate the working of Election algorithm.	**[10]**
Q.4	a)	Describe desirable features of a good message passing system.	**[10]**
	b)	Describe different distributed computing models.	**[10]**
Q.5	a)	Explain client centric consistency model in distributed system.	**[10]**
	b)	Explain need of deadlock detection algorithm. Explain probe based distributed deadlock detection algorithm	**[10]**
Q.6		Write short note on (Any two)	**[20]**
	a)	Group communication	
	b)	. NET architecture	
	c)	RMI Execution	

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(3 Hours)   **(Total Marks : 80)**

N.B. 1. Question 1 is compulsory
     2. Attempt any three questions out of the remaining five questions

Q.1   (a)   Give any two techniques of data preprocessing   (5)

          (b)   Explain Confusion matrix with one example   (5)

          (c)   Give the steps of K means clustering algorithm   (5)

          (d)   Explain concept hierarchy with example   (5)

Q.2   (a)   Write a short note on Naïve Bayesian classification   (10)

          (b)   Explain bagging technique   (10)

Q.3   (a)   Explain density based clustering   (10)

          (b)   What do you mean by outlier? Give the types of it.   (10)

Q.4   (a)   Explain market basket analysis   (10)

          (b)   Explain how the efficiency of Apriori algorithm is improved   (10)

Q.5   (a)   Suppose a group of 12 sales price records has been stored as follows: (10)

               30, 36, 47, 50, 52, 52, 56, 60, 63, 70, 70, 110

               Find mean, median, mode, inter quartile range (IQR)

          (b)   What is BI? Define decision support system.   (10)

Q.6   (a)   What is an attribute? Explain its types.   (10)

          (b)   Explain the knowledge discovery process with diagram   (10)

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76938   **Page 1 of 1**

(3 Hours)   **[Total Marks 80]**

Note: 1. Question No. 1 is Compulsory
      2. Attempt any 3 questions from the remaining questions.

Q.1   **20**
a)   Compare Waterfall model & Spiral Model.
b)   What are the Core principles of Software Engineering? Explain.
c)   With suitable Diagram , Explain Software Process Framework.
d)   Why System testing is needed?

Q.2
a)   List three common types of risks that a typical software project might suffer from. Give   **10**
       RMMM plan for the same.
b)   What is the importance of Requirement Analysis? Explain different Requirement   **10**
       Engineering tasks.

Q. 3
a)   Describe how version control & Change control is carried out during Software   **10**
       Configuration Management.
b)   Explain Design Concepts. What is coupling and cohesion? What is expected more? Why?   **10**

Q.4
a)   Explain Agile methodology with Extreme Programming Agile Development Process.   **10**
b)   What are the different categories of testing under strategy for testing conventional   **10**
       software. Explain all in detail.

Q.5.   **20**
a)   Draw DFD upto Level 2 for Restaurant Mangement system which has Food Ordering ,
       Food Delivering, invoice creation and payment subsystem.
b)   Whenever You work for a big client and they enforces their very formal approach on
       vendors and You work on fixed-scope, fixed-price contracts and client doesn't expect (for
       any reasons) rapid change in the scope, which process model you will select for
       development of product in such situation and why? Explain that Process Model in detail.

Q.6.
a)   Write short note on Process Metrics & Project Metrics.   **10**
b)   What is Quality Assurance? Discuss different attributes of Software Quality.   **10**

(Time: 03 Hours)   Total Marks: 80

N.B. (1) Question No. 1 is compulsory.

(2) Attempt any three questions from remaining.

(3) Assume suitable data wherever necessary.

(4) Figures to right indicate full marks.

1. (a)	Explain Media query with the help of an example.	**10**
(b)	Explain the three main ways to apply CSS styles to a page.	**10**
2 .(a)	Design a web page to demonstrate transformation and animation.	**10**
(b)	Differentiate between fixed-width layout and fluid-layout with example.	**10**
3 .(a)	Explain CSS3 type selectors with suitable example.	**10**
(b)	What is SEO? Comment on SEO objectives.	**10**
4.(a)	Explain in detail JSON mashup with diagram.	**10**
(b)	Explain Geolocation and Webworker with the help of suitable example.	**10**
5.(a)	Discuss in detail algorithm based ranking system.	**10**
(b)	Discuss techniques available in HTML5 and CSS3 to make web page responsive.	**10**
6.(a)	Explain characteristics of RIA. Discuss web services.	**10**
(b)	Discuss pseudo classes in CSS 3 with example.	**10**

TIME: 3 Hours   **Marks: 80**

Note: Question Number 1 is Compulsory
Attempt any three Questions from Question number 2 to 6.
Assume Suitable Data if Necessary.

Q1.a. Compare and Contrast Handshake Protocol in SSL and TLS.   **5**
    b. Explain any types of Cryptanalytic Attacks.   **5**
    c. Define Kerberos and name its Server. Briefly explain the duties of each server.   **5**
    d. Distinguish between diffusion and Confusion.   **5**

Q2.a. Explain different Authentication techniques in detail.   **10**
    b. Explain the RSA Cryptosystem and also Brief the Possible attacks on the RSA   **10**
     Cryptosystem.

Q3.a. Explain Biba and Bella Padulla Model.   **10**
    b. Explain Buffer Overflow and Incomplete Mediation flaws in a program and how   **10**
     They can be used to attack the system.

Q4.a. Explain the concept of Digital Signature. How it is used to preserve the security goals.   **10**
    b. Explain the role of IDS in securing a network. Describe different types of IDS.   **10**

Q5.a. Distinguish between two modes of IPSec and Explain the security services   **10**
     Provided by them.
    b. Explain Secure Socket Layer.   **10**

Q6. Write Short Notes on. (Attempt any **Four**, Each Carries 5M)   **20**
    a. Cookies and Secure HTTP
    b. SQL Injection Techniques
    c. DNS Spoofing
    d. Types of Firewall
    e. Security Architecture of Windows System