

(3 Hours)

[Total Marks 80]

- i. Q. 1. is Compulsory.
- ii. Attempt any three from the remaining.
- iii. Assume suitable data.

- 1(a) Define “Business Intelligence” and “decision support system” with e.g.? 05
- 1(b) Define OUTLIERS? What are the different types that occur in a database? 05
- 1(c) Clearly explain data preprocessing phase in data mining? 05
- 1(d) Define data mining? Write five e.g. for the same? 05
- Q2 (a) Explain multidimensional and multilevel association rule with e.g.? 10
- Q2 (b) Explain DBSCAN algorithm using appropriate diagrams? 10
- Q3 (a) Explain APRIORI algorithm to identify the frequent set than extract strong association rule from these sets? 10

MIN support = 30% min. confidence = 75%

TID	ITEMS
01	

Q.P. Code: 24209

- Q4(a)** Use Hierarchical clustering algorithm to cluster the following 8 points into 3 clusters **10**
 A1=(2,10), A2= (2,5), A3=(8,4), A4=(5,8),
 A5= (7, 5), A6= (6, 4), A7= (1, 2), A8= (4, 9).
- Q4(b)** Explain the designer of BI system for credit card fraud detection? **10**
- Q5(a)** Explain birch algorithm? **10**
- Q5(b)** Define Decision support system and how it is related with data mining? Explain in detail with suitable e.g.? **10**
- Q6(a)** Explain business intelligence issues? **10**
- Q6(b)** Short note on Data mining steps in KDD? Explain its architecture **10**

T.E.(INFORMATION TECHNOLOGY)(Sem VI) (CBSGS) / 37302 - DISTRIBUTED SYSTEMS

(3 Hours)

[Total Marks: 80]

N.B.

- (1) Question No.1 is **compulsory**; solve any **three** questions from **remaining** questions.
- (2) **All** questions carry **equal** marks.
- (3) Specify your answers with neat **diagrams** and **examples** wherever **necessary**.

- | | | |
|----------|--|--|
| 1 | a Explain what is callback RPC.
b Components of EJB framework.
c Explain Message Buffering in IPC.
d Group communication. | 05
05
05
05 |
| 2 | a What is a thread and advantages of using them? What are different models for organizing threads?
b What are the reasons for migration of code? Explain the various models for code migration? | 10
10 |
| 3 | a Define Happened- Before Relationship. Explain implementation of logical clocks with an example.
b Explain SOA lifecycle with diagram. Also state the advantages of SOA. | 10
10 |
| 4 | a Explain with respect to EJB- Roles in EJB and types of Beans.
b What is Mutual Exclusion? Explain Distributed Mutual Exclusion algorithm. | 10
10 |
| 5 | a Explain RPC Communication Protocol
b Describe the different approaches for deadlock detection in a distributed computing system. | 10
10 |
| 6 | Write short notes on (Any Four)
a RMI Execution
b Compare NOS and DOS
c Distributed protocols
d CORBA Components
e Compare Stateful and Stateless server implementations | 20 |

Time: 3 Hours

Marks: 80

Note: 1) Question 1 is compulsory.

2) Attempt any three from remaining Questions.

3) Assume suitable data wherever necessary.

4) Figure indicates marks.

Q1. A) Create a web page to show how you can apply the animation effects to an image. Assume suitable parameters if required. [10]

B) Create a web page to show how you can apply the transformation effects so that the image can rotate and skew by 120 degree angle. Assume suitable parameters if required. [10]

Q2. A) Define Media Query? Explain Media Query with an example. [10]

B) What is DOM structure and explain in detail DOM levels. [10]

Q3. A) Explain in detail Responsive Web Design with an example. [10]

B) Explain SWOT analysis. List the factors to determine the strengths and weaknesses of SWOT analysis. [10]

Q4. A) Discuss the strategic Goals of a SEO Practitioner. [10]

B) Explain in detail REST and WS. [10]

Q5. A) Explain in detail AJAX web application model with neat diagram. [10]

B) Discuss in detail website auditing to identify SEO problems. [10]

Q6. A) Write a code in JavaScript to open a new window when a link on a page is clicked. The new window opened, is closed by placing a button on the window and write JavaScript code on the `OnClick()` event of the button. [10]

B) Create a webpage adding a transition effect for both the width and height property on a `<div>` element, with a duration of 2 seconds for the width and 4 seconds for the height.. [10]

Time 3 hours

Marks 80

Note: Question No. 1 is Compulsory

Attempt any 3 Questions from the Remaining Questions.

- Q.1** **20**
- Explain Capability Maturity Model.
 - What is Process Pattern? Create process pattern for approach that may be applicable when stakeholders have general idea of what must be done but unclear software requirements.
 - What is Alpha testing and Beta testing? Explain.
 - What are the different design principles?
- Q.2**
- What are the different categories of testing under strategy for testing conventional software. Explain all in detail. **10**
 - List design concepts in software engineering. Explain Coupling and Cohesion . What is Preferred in the Component and why? **10**
- Q.3**
- 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. **10**
 - How agile methodology is different than traditional software development approach? Explain SCRUM in detail. **10**
- Q.4**
- What are the different requirement engineering tasks? Why identifying software requirements is difficult? **10**
 - Draw Use Case Diagram for Restaurant Management System. **05**
 - Draw DFD upto Level 1 for course enrollment system which has marks verification , course eligibility check & students detail verification **05**
- Q.5.**
- Mention reasons for project delay. What are the risks associated with project delay? Perform Risk assessment and prepare RMMM plan for the same. **10**
 - What is the need of SCM in software engineering? Explain SCM Process. **10**
- Q.6.** Write short note on any Two **20**
- Software Measurement
 - SQA activities
 - Spiral model & Compare with Prototyping model

Q.P. Code: 18252

Duration:03hrs

Marks:80

Note: 1) Question 1 is compulsory.

2) Solve any 3 questions from remaining questions.

1. a) What is Distributed Denial of Service (DDoS) Attack. (5)
 b) Explain Biometric authentication. (5)
 c) Consider an online election system identify vulnerability, threat and attack. (5)
 d) Explain SQL Injection with an example. (5)
2. a) Explain the roles of the different Servers in Kerberos Protocol. How does the user get authenticated to the different servers? (10)
 b) Explain different types of firewalls that can be used to secure a network with advantages and disadvantages. (10)
3. a) What is Digital Signature? Explain how it is created by sender and verified by receiver. (10)
 b) What is the need of Intrusion Detection System (IDS)? Explain different types of IDS with advantages and disadvantages. (10)
4. a) What are the different approaches to Software Reverse Engineering? (10)
 b) Explain how to secure email and S/MIME. (10)
5. a) List & explain types of Non-Malicious Codes : Buffer Overflow, Incomplete Mediation & Race Conditions. (10)
 b) Explain the TCP/IP Vulnerabilities i.e. layer wise well known attacks. (10)
6. Write short notes on (any four) (20)
 a) Cross Site Scripting.
 b) Digital Rights Management.
 c) Windows vulnerabilities.
 d) CIA Security goals
 e) Federated Identity Management
