

T.E. Sem VI (CBGS) (I.T.).  
Advance Internet Tech.

3/6/15

Q.P. Code : 5182

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No.1 is compulsory.  
(2) Solve any three questions from remaining questions.  
(3) Assume suitable data if necessary.  
(4) Figures to right indicate Marks.

1. a) What is search engine? Discuss in detail Algorithm-Based Ranking System. 10  
b) Explain in detail JSON mashups with neat diagram. 10
2. a) Discuss website Auditing to Identify SEO Problems. 10  
b) Explain SWOT analysis. List the factors to determine strengths & weaknesses in SWOT analysis. 10
3. a) What are XML sitemaps? Name some different types of sitemaps. Also explain main benefits of using XML sitemaps. 10  
b) Discuss SEO objectives in detail. 10
4. a) What is Responsive web design? Also explain media Query with example. 10  
b) Describe the significance & working of WSDL with an example. 10
5. a) Discuss structural Pseudo-classes in CSS3 with example. 10  
b) Explain in detail. DOM structure list levels of DOM. 10
6. a) Explain about the object that helps AJAX reload parts of a web page without reloading the whole page. 10  
b) Explain Geolocation and webworker with an example in HTML5 & CSS3. 10

(3 Hours)

[Total Marks: 80]

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

(2) Answer any three out of the remaining questions.

Q1. [a] Describe the different types of attributes one may come across in a data mining data set with two examples of each type. [05]

[b] Explain the different distance measures that can be used to compute distances between two clusters. [05]

[c] Define "Business Intelligence" and Decision Support System", with examples. [05]

[d] Define "Outlier". What are the different types of Outliers that occur in a dataset? [05]

Q2. [a] Consider the following data points: 13, 15, 16, 16, 19, 20, 20, 21, 22, 22, 25, 25, 25, 25, 30, 33, 33, 35, 35, 35, 35, 36, 40, 45, 46, 52, 70.

(a) What is the *mean* of the data? What is the *median*?

(b) What is the *mode* of the data?

(c) What is the *midrange* of the data?

(d) Can you find (roughly) the first quartile (Q1) and the third quartile (Q3) of the data?

(e) Show a *boxplot* of the data. [10]

[b] Design a BI system for fraud detection. Describe all the steps from Data collection to Decision Making clearly [10]

Q 3. [a]

Id	Homeowner	Status	Income	Defaulted
1	Yes	Employed	High	No
2	No	Business	Average	No
3	No	Employed	Low	No
4	Yes	Business	High	No
5	No	Unemployed	Average	Yes
6	No	Business	Low	No
7	Yes	Unemployed	High	No
8	No	Employed	Average	Yes
9	No	Business	Low	No
10	No	Employed	Average	Yes

Illustrate any one classification technique for the above data set. Show how we can classify a new tuple, with (Homeowner = Yes; Status = Employed; Income = Average). [10]

[ TURN OVER

[b] Why is Data Preprocessing required? Explain the different steps involved in Data Preprocessing. [10]

Q 4. [a] Use K-means to cluster the following data set into 3 clusters. [10]

Protein	20	21	15	22	20	25	26	20	18	20
Fat	9	9	7	17	8	12	14	9	9	9

[b] Describe the different visualization techniques that can be used in data Mining. [10]

Q.5 [a] Consider the following transaction database:

TID	Items
01	A, B, C, D
02	A, B, C, D, E, G
03	A, C, G, H, K
04	B, C, D, E, K
05	D, E, F, H, L
06	A, B, C, D, L
07	B, I, E, K, L
08	A, B, D, E, K
09	A, E, F, H, L
10	B, C, D, F

Apply the Apriori algorithm with minimum support of 30% and minimum confidence of 70%, and find all the association rules in the data set. [10]

[b] Explain different methods that can be used to evaluate and compare the accuracy of different classification algorithms. [10]

Q 6. Explain in brief:

[a] DBSCAN clustering algorithm with an example [10]

[b] Multilevel and Multidimensional Association rules [10]



(Time: 3hrs)

(Marks 80)

1. Question No 1 is compulsory.
2. Attempt any three out of the remaining five questions.

- Q1. (a) Explain with examples, Vulnerability, Threat and attacks. 08
- Q1. (b) Discuss with examples the following:
- |                   |                           |    |
|-------------------|---------------------------|----|
| i) ARP spoofing   | iii) TCP syn flood attack | 12 |
| ii) Port scanning | iv) IP spoofing           |    |
- Q2. (a) Discuss with an example how knapsack is used in cryptography. 10
- Q2. (b) Explain the roles of the different servers in Kerberos protocol. How does the user get authenticated to the different servers? 10
- Q3. (a) Define access control list and capability list and compare them. Explain the Bell La Padula access control model. 10
- Q3. (b) Differentiate between the tunnel mode and transport mode of IPSec. Explain how integrity is achieved. 10
- Q4. (a) List the different protocols of SSL. Explain in detail Handshake protocol. How does server get authenticated to client? 10
- Q4. (b) List and explain the different TCP/IP vulnerabilities. 10
- Q5. (a) What are the different approaches to Software Reverse Engineering? 10
- Q5. (b) With the help of examples explain cross-site scripting and SQL injection attacks 10
- Q6. Write short notes on: 20
- |                                       |  |
|---------------------------------------|--|
| i) Linux File Security                |  |
| ii) Phishing and Pharming techniques  |  |
| iii) Federated Identity Management    |  |
| iv) Biometric authentication schemes. |  |
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QP Code : 5173

(3 Hours)

[ Total Marks : 80

N.B.: (1) Question 1 is **compulsory**.

(2) Write **any 3** questions from the remaining five.

(3) Figures to the right indicate full marks.

1. (a) What happens if two process detect failure of the coordinator simultaneously and both decide to hold election? Explain. 5
  - (b) What do you mean by marshalling of arguments and results in RPC? List the actions involved in marshalling 5
  - (c) Can persistence be maintained at the bean level? If so , how it is done? 5
  - (d) Comparision of NOS and DOS. 5
  2. (a) Explain the Lamport's happens before relation along with the conditions. How are Lamport's logical clocks implemented? 10
  - (b) Compare processes and threads. Explain user level and kernel level threads. What is the need of light weight threads? 10
  3. (a) Explain the need of client centric consistency models as compared to data centric consistency models. Explain any two client centric models. 10
  - (b) How deadlock detection is different for a disributed system? Explain any one algorithm for Distributed deadlock detection. 10
  4. (a) What are the reasons for migration of code? Explain the various models for code migration. 10
  - (b) Explain SOA lifecycle with diagram. Also state the advantages of SOA. 10
  5. (a) Explain RMI in CORBA by defining three level architecture jn CORBA. 10
  - (b) Give in detail steps required for developing an application using EJB framework with example. 10
  6. Write Shortnote On (Any two) 20
    - (a) Group communication
    - (b) Distributed Computing Models
    - (c) .NET architecture
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T.E.(IT)-VI  
Software Engg.

12/5/2015

QP Code : 5169

[Total Marks : 80]

(3 hours)

- N.B. (1) Question No. 1 is compulsory.  
 (2) Write any **three** questions out of remaining.  
 (3) Assume suitable data if required.

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|--------|--|----|
| 1. (a) | Difference between prescriptive and evolutionary models.   | 5  |
| (b)    | Explain SCRUM.   | 5  |
| (c)    | Mention SQA activities.  | 5  |
| (d)    | Explain the need for system testing.   | 5  |
| 2. (a) | What are the risks associated with software projects? How do project managers manage such risks? | 10 |
| (b)    | Draw the use case diagram and activity diagram for course registration system explained below:   | 10 |

Students may login to the system to register courses or retrieve all the courses they have already registered. Instructors may login to the system to add courses or retrieve all the courses they have already added. A student cannot register a course if: i) he/she doesn't meet the prerequisites, ii) the students registered in the course exceed the capacity of the classroom, iii) the course has a time conflict with other courses in the same term.

- |        |  |             |
|--------|--|-------------|
| 3. (a) | Explain in detail Spiral model and compare it with component model.    | 10          |
| (b)    | Explain architectural design for e-Commerce System.                    | 10          |
| 4. (a) | Prepare SRS for railway reservation system.                            | 10          |
| (b)    | Describe in detail white box techniques                                | 10          |
| 5. (a) | Explain how change control and version control are carried out in SCM. | 10          |
| (b)    | Draw DFD up to level 2 for order processing system.                    | 10          |
| 6.     | Short notes on any two   | 10 x 2 = 20 |
| (a)    | Aspect oriented development  |             |
| (b)    | OO testing   |             |
| (c)    | Process and project metrics  |             |