

(3 Hours)

[ Total Marks : 100

**N.B. :** (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six**.

1. (a) Define Automation. Differentiate between soft and hard automation. 5  
 (b) List and define Kinematic parameters. 5  
 (c) Explain in brief various types of work envelopes. 5  
 (d) Explain fundamental rotation. Develop fundamental rotation matrices. 5
2. (a) Define Direct Kinematics. Develop arm equation for 5-axis RHINO XR3 robot with the help of D-H Algorithm. 10  
 (b) Explain PnP operation with sketches. 10
3. (a) Obtain Inverse Kinematic Solution for 4 axis SCARA robot. 10  
 (b) Explain various template matching algorithms and compare them. 10
4. (a) Classify robot as per workspace and explain in brief. 10  
 (b) Explain Bounded Deviation Algorithm (BDA) to obtain straight line motion. 10
5. (a) List various workspace fixtures and explain them in brief. 10  
 (b) State the role of shrink and swell operators in robot vision. Differentiate between these operators with suitable examples. 10
6. (a) List various specifications of robot and explain at least 6 significant specifications with sketches wherever required. 10  
 (b) Explain configuration space and also the role of G. V. D. in task planning. 10
7. Write short notes on the following :— 20
  - (a) NC VS CNC machines
  - (b) Interpolated motion
  - (c) Perspective transformations
  - (d) Tool Configuration Vector (TCV).

Con.6598-11.

(OLD COURSE)

MP-4927

(3 Hours)

[ Total Marks : 100

**N.B.:** (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions from remaining **six** questions.

1. (a) What is data Warehouse ? Why it is need ? Is it just another Database Management System ? Compare and contrast with Operational System. 10  
(b) Explain KDD Process and architecture of typical data mining system. 10
2. (a) Describe feature of Web enabled data warehouse. Why data security a major concern for web enabled data warehouse ? 10  
(b) Write difference between OLTP and OLAP. Also explain different OLAP operations and applications. 10
3. (a) What are techniques and application of data mining ? 10  
(b) Define classification. Explain K nearest neighbour classification algorithm. 10
4. (a) What is Web structure mining ? What are the techniques used for it ? What are Authorative and Hub pages ? 10  
(b) Explain extraction process in detail. 10
5. (a) What is MDDB ? What type of business requirements determine use of MDDB in Data Warehouse. 10  
(b) Explain Temporal mining. 10
6. (a) Explain Data Cleaning, Data Integration and Transformation in detail. 10  
(b) Explain different data reduction techniques. 10
7. Write short notes on (any **four**) :— 20
  - (a) Web Usage Mining
  - (b) Project Planning and Management of Data Warehouse.
  - (c) Market Basket Analysis
  - (d) HITS
  - (e) Linear Regression
  - (f) Information Package Diagram.

12/12/2011

AGJ 2nd half (c+) 38

BE IT (sem-VIII) (OLD)

# Elective II Information Security

Con. 6468-11.

(OLD COURSE)

MP-4933

(3 Hours)

[ Total Marks : 100

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

(2) Attempt any **four** questions from remaining **six** questions.

Q.1.

(a) What are the information security goals? Explain why the balance among different goals is needed (10)

(b) Compare the different separation methods used as a basis for protection in Operating systems, citing their uses and disadvantages (10)

Q.2.

(a) Explain technique (or fundamental concepts) for following attacks? (20)

1. Sync-flood

2. DoS and DDoS

3. Packet sniffing

4. Spoofing

5. Session hijacking

6. Port Scanning

7. OS Fingerprinting .

Q.3.

(a) What are the authentication mechanisms in Operating Systems (10)

(b) What is inference problem in Database? Discuss with example . (10)

Q.4.

a) Explain DMZ in enterprise wide network? Explain various attacks possible on DMZ and its countermeasure. (10)

(b) List the characteristics of a good firewall implementation.

What are the limitations of a firewall ?

Give the comparison between the several types of firewall such as packet filtering, state full inspection, application proxy and personal firewall? (10)

Q.5.

(a) Identify security issues due to protocol weakness in following protocols (10)  
(1) CSMA/CD (2) ARP (3) ping (icmp).

(b) What is the difference between Digital signature and Digital Certificate (05).

(c) What are the advantage of SET Protocol for Internet payment compare to SSL . (5)

Q.6.

(a) Explain IDS and Various type of IDS in detail. (10)

(b) What are the possible attacks on the password, Explain each in detail ? (10)

Q.7.

Write short notes :

(20)

(a) Kerberos

(b) RBAC (role based Access control)

(c) Covert Channel

(d) IPSEC.