| Written by Administrator<br>Saturday, 07 November 2009 06:22 - |       |            |
|--|-------|------------|
| Distributed System   |       |            |
| Subject Code   |       | <u> </u> : |
| •  | '     | <u>'</u>   |
| IA Marks   | : 25  |            |
| No. of Lecture Hrs/Week  |       | : 04       |
| Exam Hours   | : 03  |            |
| Total no. of Lecture Hrs.                                      |       | : 52       |
| Exam Marks   | : 100 |            |

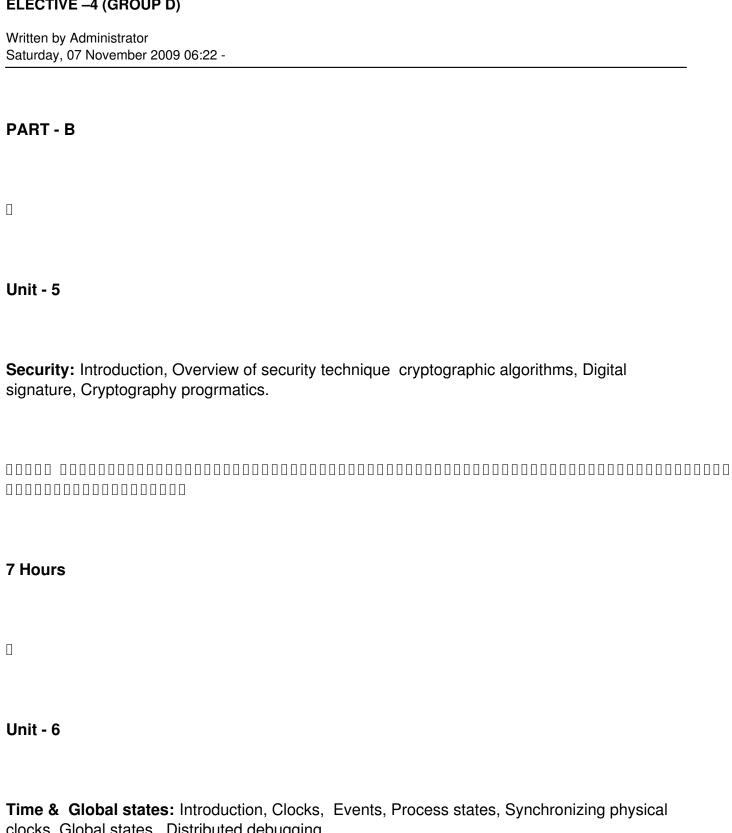
| Written by Administrator Saturday, 07 November 2009 06:22 -   |
|---|
| PART - A  |
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|   |
| Unit - 1  |
|   |
| Characterization of distributed systems: Introduction, Examples of distributed systems, Resource sharing and the web, Challenges. |
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| 6 Hours   |
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| Unit - 2  |
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| System models: Introduction, Architectural models, Fundamental mode.  |
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| 6 Hours   |
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# **ELECTIVE -4 (GROUP D)** Written by Administrator Saturday, 07 November 2009 06:22 -П Unit - 3 Interprocess communication: Introduction, The API for the internet protocols, External data representation and marshalling, Clint-server communication, Group communication. 8 Hours П Unit - 4

Distributed objects and remote invocation: Introduction, Communication between distributed objects, Remote procedure call, Events and notifications.

#### 6 Hours

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clocks, Global states, Distributed debugging.

Written by Administrator

| Saturday, 07 November 2009 06:22 -   |
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| 7 Hours  |
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| Unit - 7   |
| Offit - 7  |
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| Coordination and Agreement: Distributed mutual exclusion, Elections, Multicast |
| communication.   |
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|  |
| 7 Hours  |
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| Unit - 8   |
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| CORBA case study: Introduction, CORBA RMI, CORBA Services.                     |
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| 5 Hours  |
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| Written by Administrator<br>Saturday, 07 November 2009 06:22 -  |
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|   |
|   |
|   |
| Text book:  |
| 1. "Distributed Systems, Concepts & Design", George Coulouris, Jeam Dollimore, Tim Kindberg, fourth edition, 2006. Pearson education. |
|   |
| Reference book:   |
| 1. "Distributed System Architecture, a Middleware Approach" Arno puder, Kay Romer, Frank Pilhofer, Morgan Kaufmann publishers.        |
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Saturday, 07 November 2009 06:22 -

Written by Administrator

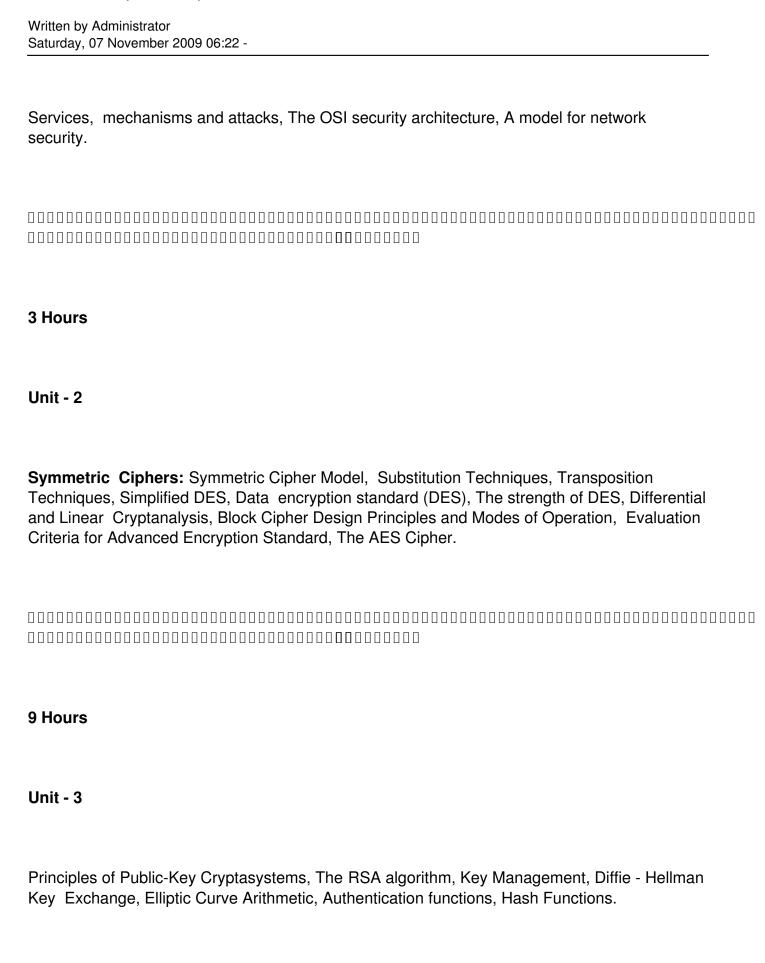
| Network security          |       |        |
|---------------------------|-------|--------|
| Subject Code              |       | <br> : |
|                           | T. 05 |        |
| IA Marks                  | : 25  |        |
| No. of Lecture Hrs/Week   |       | : 04   |
| Exam Hours                | : 03  |        |
| Total no. of Lecture Hrs. |       | : 52   |

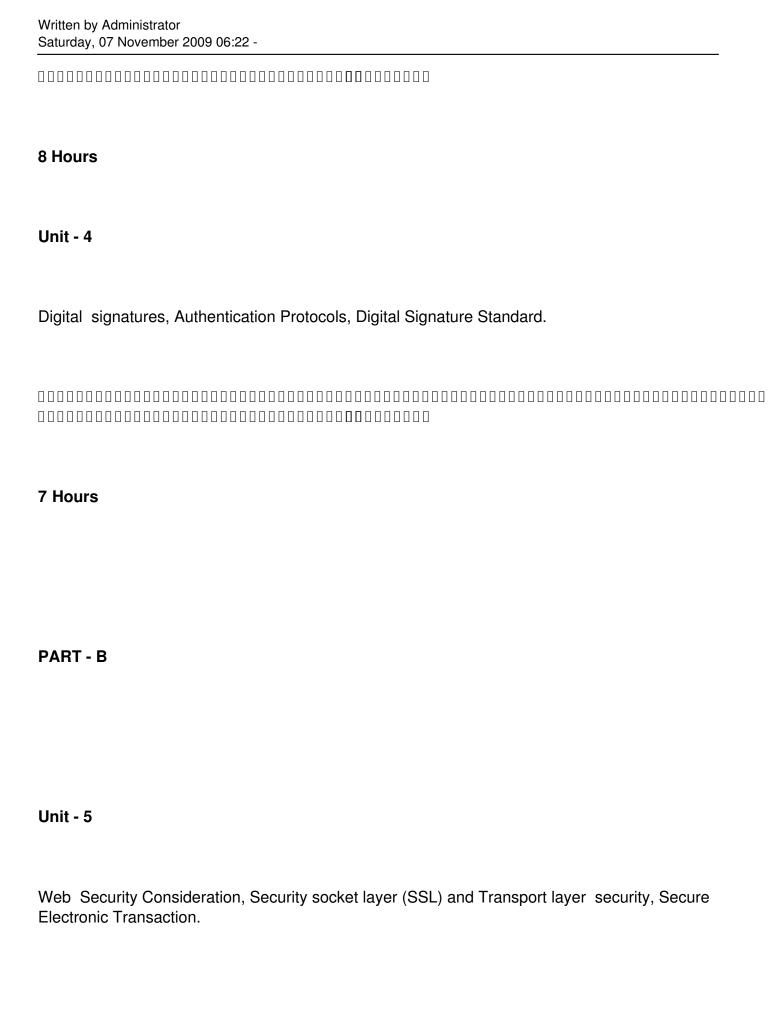
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## PART - A

Exam Marks

## Unit - 1





| Written by Administrator Saturday, 07 November 2009 06:22 -             |
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|   |
| 6 Hours   |
| Unit - 6  |
| Intruders, Intrusion Detection, Password Management.                    |
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| 6 Hours   |
|   |
| Unit - 7  |
| Malicious software: Viruses and Related Threats, Virus Countermeasures. |
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| 6 Hours   |

Written by Administrator Saturday, 07 November 2009 06:22 -

| Unit - 8   |
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| Firewalls Design Principles, Trusted Systems.  |
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| 7 Hours  |
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| Text book:   |
| Cryptography and Network Security, William Stalling, Pearson Education, 2003.  |
|  |
| Reference books:   |
| <ol> <li>Cryptography and Network Security, Behrouz A. Forouzan, TMH, 2007.</li> <li>Cryptography and Network Security, Atul Kahate, TMH, 2003.</li> </ol> |
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| Written by Administrator Saturday, 07 November 2009 06:22 - |       |            |  |
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| Internet Engineering  |       |            |  |
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| Total no. of Lecture Hrs.                                   |       | : 52       |  |
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| Exam Marks  | : 100 |            |  |
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**ELECTIVE –4 (GROUP D)** Written by Administrator Saturday, 07 November 2009 06:22 -PART - A Unit - 1 Introduction: Communication model, Communication software, and communication protocol: Representation, Development methods, Protocol engineering process. **NETWO** RK REFERENCE MODEL Layered architecture, Network services and interfaces, protocol functions, OSI model, TCP/IP protocol suite, Application protocols. 7 Hours

#### Unit - 2

**Protocol Specification:** Communication service specification, Protocol entity specification, Interface specifications, Interactions, Multimedia protocol specifications, Internet protocol specifications.

| Written by Administrator Saturday, 07 November 2009 06:22 -   |
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| 6 Hours   |
| Unit - 3  |
| Specification And Description Language (SDL): A protocol specification language: SDL.   |
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| 6 Hours   |
| Unit - 4  |
| Examples of SDL based protocol specifications, Other protocol specification languages. Protocol Verification And Validation, Protocol verification, Verification of a protocol using finite state machines. |
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| 6 Hours   |
| PART – B  |
| Unit - 5  |

Written by Administrator Saturday, 07 November 2009 06:22 -

Protocol validation, Protocol design errors, and protocol validation approaches, SDL based protocol verification, SDL based protocol validation.

#### 7 Hours

#### Unit - 6

**Protocol Conformance Testing:** Conformance testing methodology and framework, Conformance test architectures, Test sequence generation methods, Distribute architecture by local methods, Conformance testing with TTCN, Conformance testing of RIP, Multimedia applications testing, SDL based tools for conformance testing.

#### 7 Hours

#### Unit - 7

**Protocol Performance Testing:** SDL based performance testing of TCP, OSPF, Interoperability testing, SDL based interoperability testing of CSMA/CD and CSMA/CA protocol using bridge, Scalability testing.

| Written by Administrator Saturday, 07 November 2009 06:22 -   |
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| 7 Hours   |
| Unit - 8  |
| <b>Protocol synthesis:</b> Synthesis methods, interactive synthesis algorithms, automatic synthesis algorithm, automatic synthesis of SDL from MSC protocol re synthesis. |
|   |
| 6 Hours   |
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| Text book:  |
| 1. Communication Protocol Engineering, P. Venkatarm and S. S. Manvi, PHI, 2004.   |
| References books:   |

| ELECTIVE –4 (GROUP D)  |                                |   |   |
|--|--------------------------------|---|---|
| Written by Administrator<br>Saturday, 07 November 2009 06:22 - |                                |   |   |
| 1.   | The Internet and its Protocols | <b>s</b> , Adrian Farrel, Elsevier, 2006. |   |
|  |                                |   |   |
| 2.   | TCP/IP Protocol Stack, B A F   | Forouzan, TMH, 2006.                      |   |
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| Biom   | edical Signal Processing       |   |   |
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IA Marks

No. of Lecture Hrs/Week

: 04

Written by Administrator Saturday, 07 November 2009 06:22 -

| Total | no. of Lecture Hrs. | : 52 |
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| Exam Marks |  | : 100 |
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#### PART - A

#### Unit - 1

**Introduction to Biomedical Signals:** The nature of Biomedical Signals, Examples of Biomedical Signals, Objectives and difficulties in Biomedical analysis.

#### 5 Hours

#### Unit - 2

**Electrocardiography:** Basic electrocardiography, ECG lead systems, ECG signal characteristics.

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Saturday, 07 November 2009 06:22 -

#### 5 Hours

#### Unit - 3

**Basics of Digital Filtering:** Digital filters, the Z-transform, elements of digital filter, types of digital filters, transfer function of a difference equation, the z-plane pole-zero plot, the rubber membrane concept.

#### 6 Hours

Written by Administrator Saturday, 07 November 2009 06:22 -

| Unit - 4   |
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| <b>Adaptive Filters:</b> Principal noise canceler model, 60-Hz adaptive canceling using a sine wave model, other applications of adaptive filtering.                           |
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| 8 Hours  |
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| Part - B   |
| Unit - 5   |
| <b>Signal Averaging:</b> Basics of signal averaging, signal averaging as a digital filter, a typical averager, software for signal averaging, limitations of signal averaging. |
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| 8 Hours  |
| Unit - 6   |

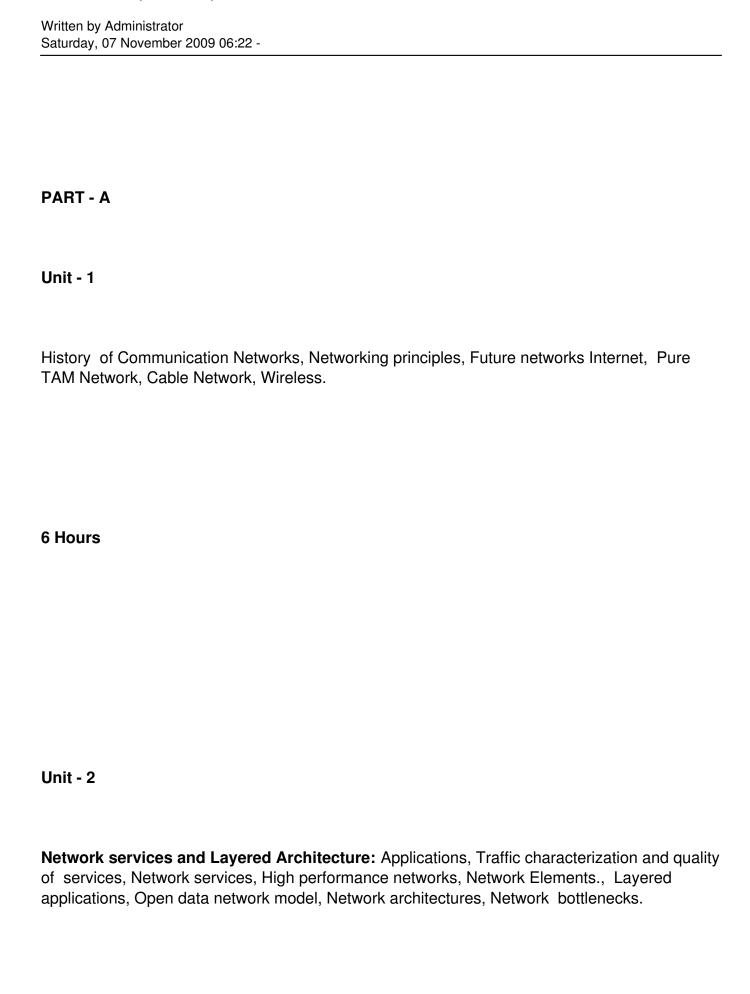
Written by Administrator Saturday, 07 November 2009 06:22 -

| Data Reduction Techniques: Turning point algorithm, Fan algorithm, Huffman coding.  |
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| 8 Hours   |
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| Unit - 7  |
| <b>ECG QRS Detection:</b> Power spectrum of the ECG, bandpass filtering techniques, differentiation techniques, template matching techniques, a QRS detection algorithm.  |
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| 6 Hours   |
| Unit - 8  |
| <b>ECG Analysis Systems:</b> ECG interpretation, ST-segment analyzer, portable arrhythmia monitor.  VLSI in Digital signal Processing: Digital signal processors, high performance VLSI signal processing, VLSI applications in medicine, VLSI sensors for biomedical signals, VLSI tools, Choice of custom, ASIC, or off-the-shelf components. |

Written by Administrator Saturday, 07 November 2009 06:22 -6 Hours **Text Book:** 1. Biomedical Digital Signal Processing - Willis J. Tompkins, PHI, 2001. Reference Book:

1. Biomedical Signal Analysis - Rangaraj M. Rangayyan John Wiley & Sons, Inc., 2002.

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| No. of Lecture Hrs/Week                                     |       | : 04 |
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| Exam Hours  | : 03  |      |
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| Total no. of Lecture Hrs.                                   |       | : 52 |
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| Exam Marks  | : 100 |      |
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Written by Administrator

PART - B

Saturday, 07 November 2009 06:22 -7 Hours Unit - 3 Internet and TCP/IP Networks: Multicast IP, Mobile IP, TCP and UDP, Applications, FTP, SMTP. Internet success and limitations, Performance of TCP/IP Networks, Performance of circuit switched networks. 7 Hours Unit - 4 SONET, DWDM, FTH, DSL, Intelligent networks CATV. 6 Hours

Written by Administrator Saturday, 07 November 2009 06:22 -Unit - 5 ATM: Main features of ATM, Addressing, signaling and Routing, ATM header structure, ATM AAL, Internetworking with ATM. 7 Hours Unit - 6 Wireless Networks: Link level design, Channel Access, Network design, Wireless networks today, Future networks, ad hoc networks, High speed Digital cellular, Home RF and Bluetooth. 6 Hours

#### Unit - 7

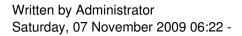
Control of networks, Objectives and methods of control, Circuit switched networks, Datagram Networks Network economics, Derived demand for network services, ISPs, subscriber demand

Written by Administrator Saturday, 07 November 2009 06:22 model, Empirical model. 7 Hours Unit - 8 Optical networks: WDM systems, Optical cross connects, Optical LANs, Optical paths and networks. 7 Hours **Text Book:** High Performance Communication Networks, Warland and Varaiya: Morgan Kauffm an/ Elsivier 2

## **Reffrence Books:**

Edition 2000.

1. High-Speed Networks and Internet: Performance and Quality of service, William



Stallings , Pearson Edu., 2001.

2. **Building High-Speed Networks**, Tere Parnell, TMGH, 2000.

**Fuzzy Logic** 

Written by Administrator
Saturday, 07 November 2009 06:22 
Subject Code ::

IA Marks : 25

No. of Lecture Hrs/Week :: 04

Exam Hours :: 03

| Exam Marks | : 100 |
|------------|-------|

#### PART - A

#### Unit - 1

**Introduction:** Background, Uncertainty and imprecision, Statistics and random processes, Uncertainty in information, Fuzzy sets and membership, Chance versus ambiguity, Classical sets - operations on classical sets to functions, Fuzzy sets-fuzzy set operations, Properties of fuzzy sets. Sets as points in hypercubes.

Written by Administrator Saturday, 07 November 2009 06:22 -

7 Hours Unit - 2 Classical relations and fuzzy relations: Cartesian product, Crisp relations-cardinality of crisp relations, Operations on crisp relations, Properties of crisp relations, Compositions, Fuzzy relations-cardinality of fuzzy relations, Operations on fuzzy relations, Properties of fuzzy relations, Fuzzy Cartesian product and composition, Non interactive fuzzy sets, Tolerance and equivalence relations-crisp equivalence relation, Crisp tolerance relation, Fuzzy tolerance, Max-min Method, other similarity methods. 7 Hours Unit - 3 Membership functions: Features of the membership function, Standards forms and boundaries, fuzzification, Membership value assignments-intuition, Inference, Rank ordering, Angular fuzzy sets. Neural networks, Genetic algorithms, Inductive reasoning.

| Written by Administrator<br>Saturday, 07 November 2009 06:22 -  |
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| 6 Hours   |
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| Unit - 4  |
|   |
| <b>Fuzzy-to-crisp conversions and fuzzy arithmetic:</b> Lambda-cuts for fuzzy sets, Lambda-cuts for fuzzy relations, Defuzzification methods. Extension principle-crisp functions, Mapping and relations, Functions of fuzzy sets-extension principle, Fuzzy transform (Mapping), Practical considerations, and Fuzzy numbers Interval analysis in Arithmetic, Approximate methods of extension-vertex method, DSW algorithm, Restricted DSW algorithm, Comparisons, Fuzzy vectors. |
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| 6 Hours   |
| PART - B  |
| Unit - 5  |
| Classical logic and fuzzy logic: Classical predicate logic-tautologies, Contradictions, Equivalence, Exclusive or and exclusive nor, Logical proofs, Deductive Inferences, Fuzzy logic, Approximate reasoning, Fuzzy tautologies, Contradictions, Equivalence and logical proofs, Other forms of the implication operation, Other forms of the composition operation.   |

| Written by Administrator           |
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| Saturday, 07 November 2009 06:22 - |

6 Hours

Unit - 6

**Fuzzy rule-based systems:** Natural language, Linguistic hedges, Rule-based system-canonical rule forms, Decomposition of compound rules, Likelihood and truth qualification, Aggregation of fuzzy rules, Graphical techniques of inference.

| Written by Administrator<br>Saturday, 07 November 2009 06:22 -  |
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| Unit - 7  |
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| <b>Fuzzy decision making:</b> Fuzzy synthetic evaluation, Fuzzy ordering, Preference and consensus, Multiobjective decision making under fuzzy states and fuzzy actions.  |
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| 8 Hours   |
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| Unit - 8  |
| Francis also altitude and a contraction by a suivalence malations arise relations. Francis relations  |
| <b>Fuzzy classification:</b> Classification by equivalence relations-crisp relations, Fuzzy relations cluster analysis, Cluster validity, c-Means clustering-hard c-Means (HCM), Fuzzy c-Means (FCM), classification metric, Hardening the fuzzy c-Partition, Similarity relations from clustering. |
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| 6 Hours   |
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|   |
| Text book:  |
| 1. "Fuzzy logic with Engineering applications", Timothy J. Ross, McGraw-Hill, 1997.   |

