Exam Marks

Written by Administrator Saturday, 07 November 2009	9 06:24 -		
Mulkima dia Oamanania			
Multimedia Communic	ations		
Subject Code			:
IA Marks	: 25		
No. of Lecture Hrs/We	ek		: 04
Exam Hours	: 03		
Total no. of Lecture Hi	S.		: 52

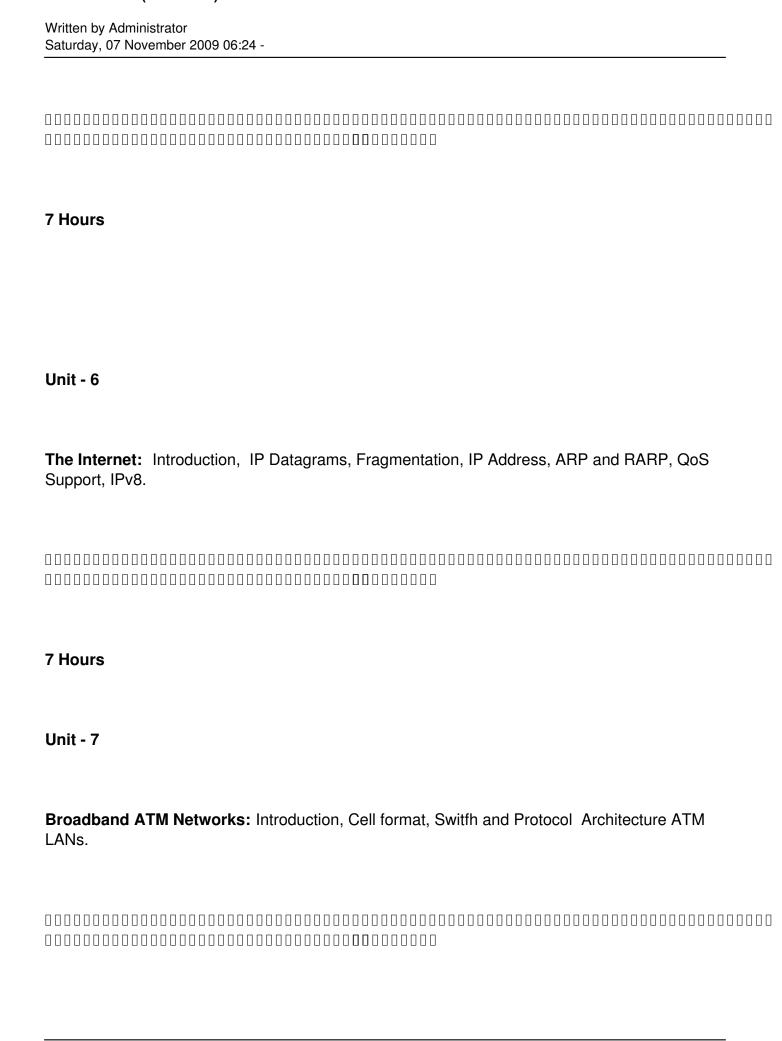
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Saturday, 07 November 2009 06:24 -

Written by Administrator

PART - A Unit - 1 Multimedia communications: Introduction, multimedia information representation, multimedia networks, multimedia applications, media types, communication modes, network types, multipoint conferencing, network QoS application QoS. 7 Hours Unit - 2 Multimedia information representation: Introduction, digital principles, text, images, audio, video. 5 Hours Unit - 3 **Text and image compression:** Introduction, compression principles, text compression, image

Written by Administrator Saturday, 07 November 2009 06:24 -
compression.
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7 Hours
Unit - 4
Audio and video compression: Introduction, audio compression, DPCM, ADPCM, APC, LPC, video compression, video compression principles, H.261, H.263, MPEG, MPEG-1, MPEG-2, and MPEG-4.
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7 Hours
PART - B
Unit - 5
Multimedia information networks: Introduction, LANs, Ethernet, Token ring, Bridges, FDDI High-speed LANs, LAN protocol.



Written by Administrator Saturday, 07 November 2009 06:24 -
6 Hours
Unit - 8
Transport Protocol: Introduction, TCP/IP, TCP, UDP, RTP and RTCP.
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6 Hours
Text book:
TEXT DOOK.
1. Multimedia Communications: Applications, Networks, Protocols and Standards , Fred Halsall, Pearson Education, Asia, Second Indian reprint 2002.

Written by Administrator Saturday, 07 November 2009 06:24 -

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IA Marks

No. of

Lecture Hrs/Week

 Multimedia Information Networking, Nalin K. Sharda, PHI, 2003. "Multimedia Fundamentals: Vol 1 - Media Coding and Content Processing", Ralf Steinmetz, Klara Narstedt, Pearson Education, 2004.
3. "Multimedia Systems Design", Prabhat K. Andleigh, Kiran Thakrar, PHI, 2004.
Real Time Operating Systems
Subject Code :

: 25

: 04

Written by Administrator Saturday, 07 November 2009 06:24 -

Total no. of Lecture Hrs.	: 52

: 100

Part - A

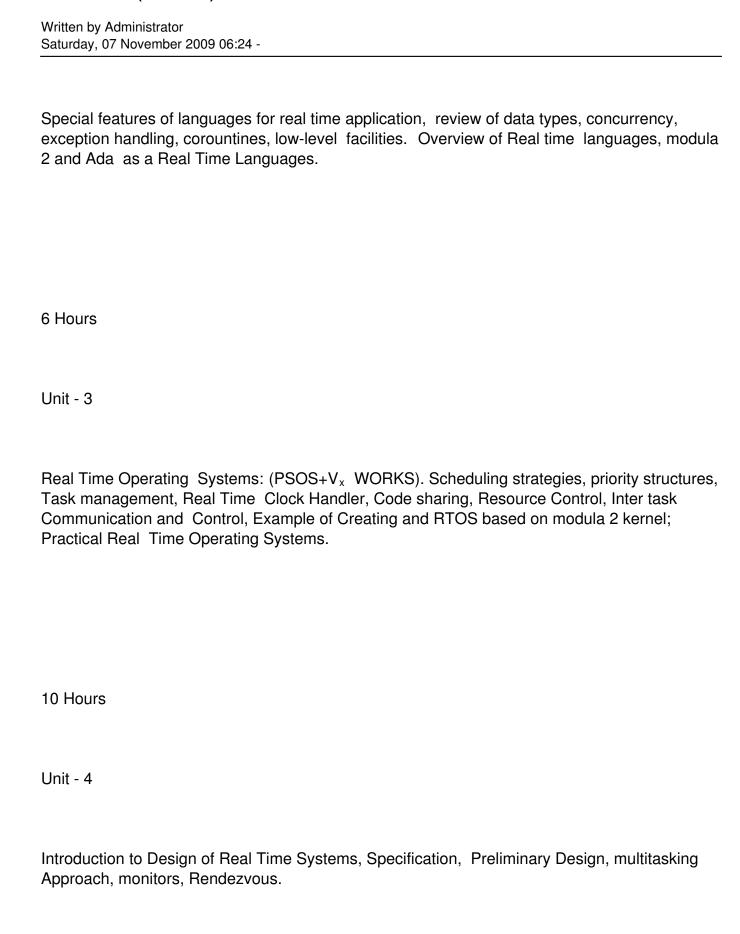
Exam Marks

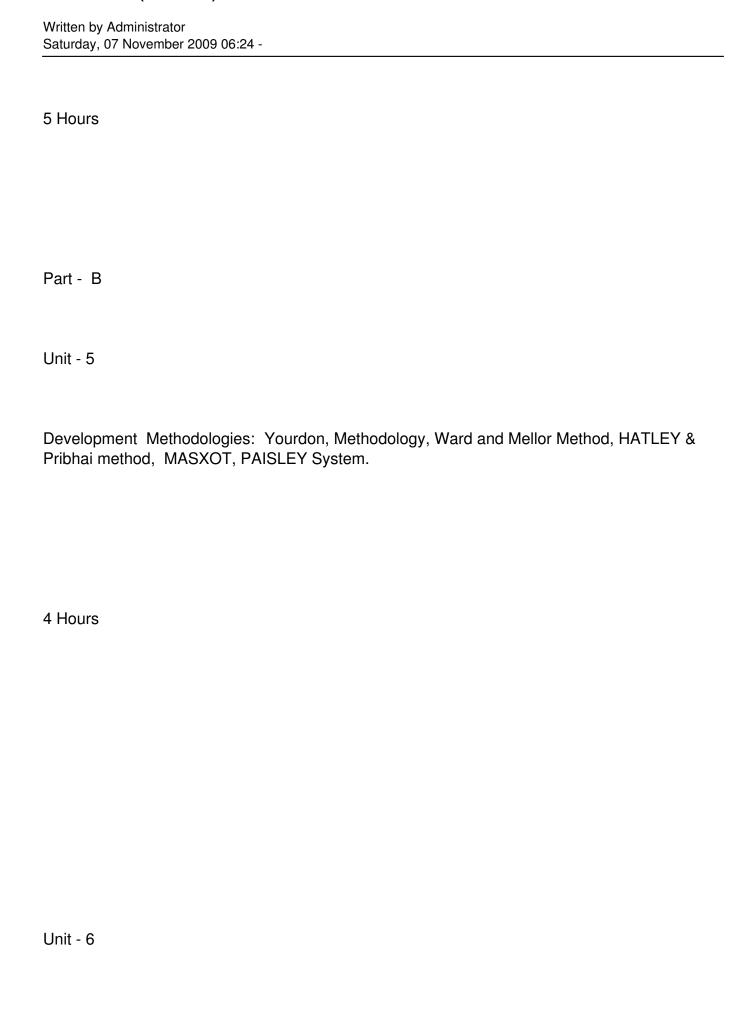
Unit - 1

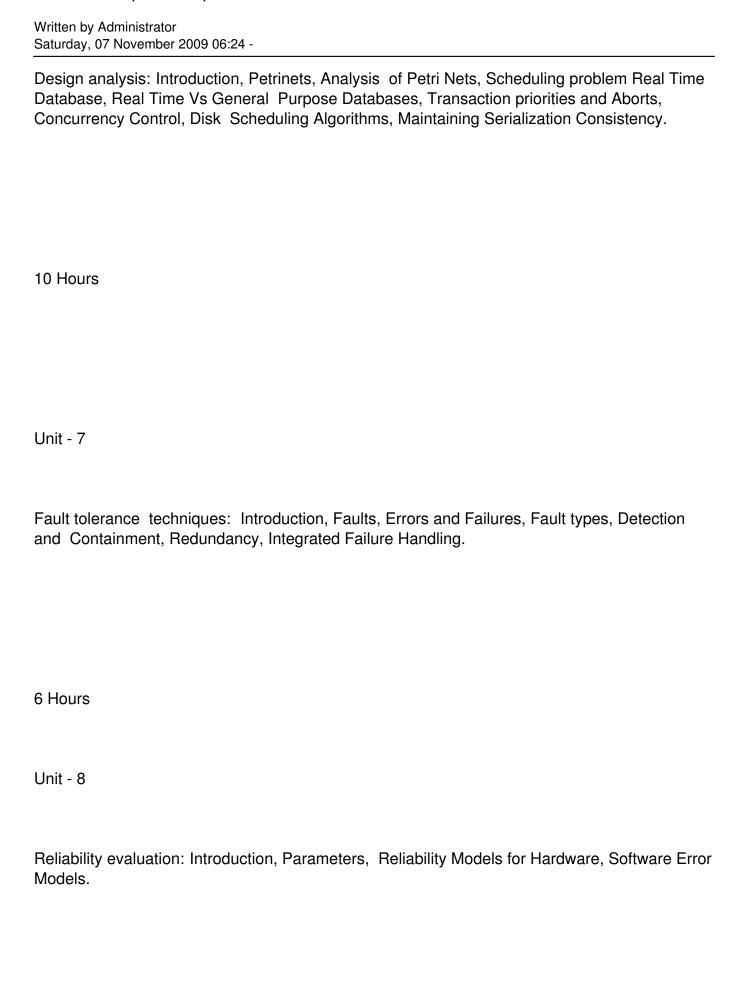
Definition and Classification of Real time systems: Concept of computer control, sequence, loop and supervisor control, centralized, hierarchical and distributed systems, Human Computer interface, hardware requirement for real time applications, specialized processors, interfaces, communications.

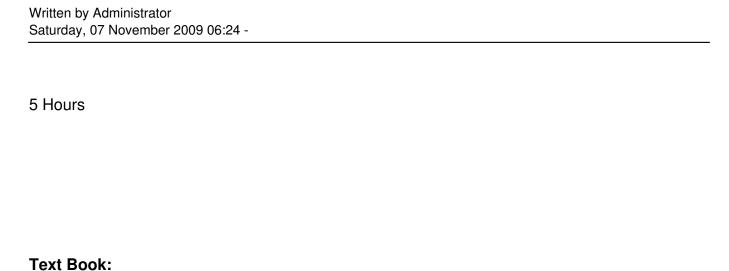
6 Hours

Unit - 2









1. Real Time Systems, C. M. Krishna, Kang. G. Shin, Mc Graw Hill, India, 1997.

Reference Books:

- 1. **Embedded Systems**, Raj Kamal, Tata Mc Graw Hill, India, 2008.
- 2. **Real-Time Systems Design and Analysis**, Phillip. A. Laplante, second edition, PHI, 2005.
 - 3. **Real Time Systems**, Jane. W. S. Liu, Pearson education, 2005.

OPTICAL NETWORKS

ELECTIVE -5 (GROUP E) Written by Administrator Saturday, 07 November 2009 06:24 Subject Code :: IA Marks : 25 No. of Lecture Hrs/Week :: 04 Exam Hours :: 03

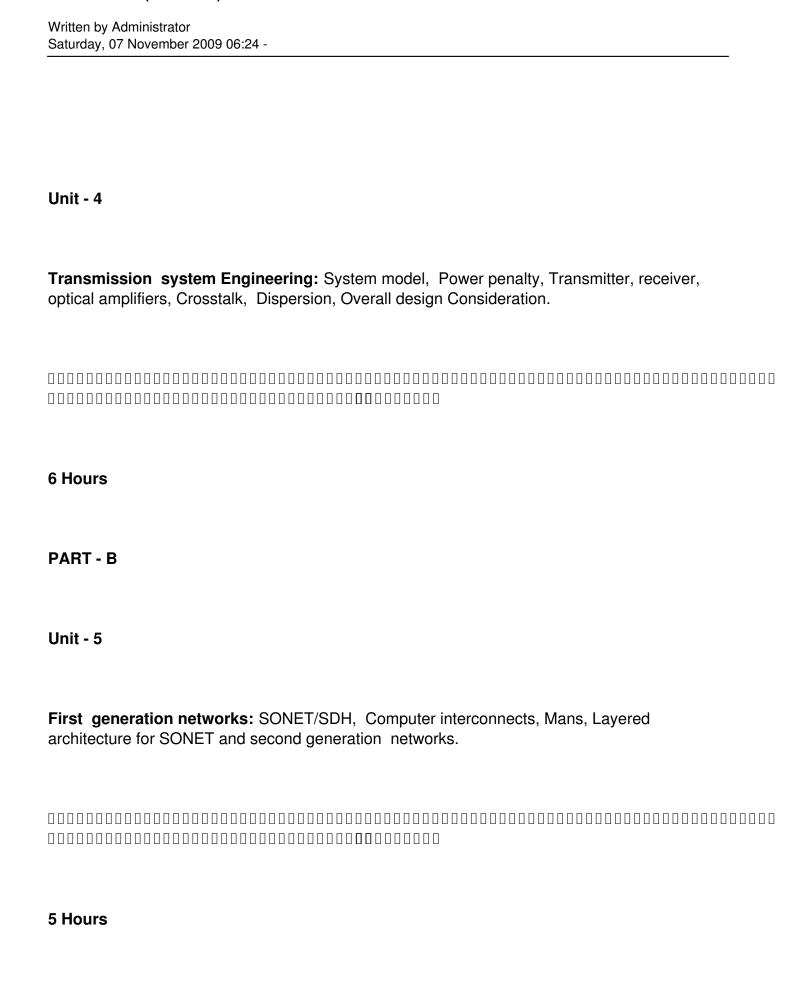
Exam Marks		: 100
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PART - A

Unit - 1

Introduction to optical networks: Telecommunication networks, First generation optical networks, Multiplexing techniques, Second generation optical networks, System and network evolution. Non linear effects SPM, CPM, four wave mixing, Solitons.

Written by Administrator Saturday, 07 November 2009 06:24 -
6 Hours
Unit - 2
Components: Couplers, isolators and Circulators, Multiplexes and filters Optical amplifiers.
7 Hours
Unit - 3
Transmitters, detectors, Switches, Wavelength converters.
7 Hours



Saturday, 07 November 2009 06:24 -

Written by Administrator

Unit - 6
Wavelength routing networks: Optical layer, Node design, Network design and operation, routing and wavelength assignment architectural variations.
7 Hours
Unit - 7
Virtual topology design: Virtual topology design problem, Combines SONET/WDM network design, an ILP formulation, Regular virtual topologies, Control and management, Network management configuration management, Performance management, fault management.
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7 Hours
Unit - 8
Access networks: Network architecture overview, present and future access networks, HFC, FTTC, Optical access networks Deployment considerations, Photonic packet switching, OTDM, Multiplexing and demultiplexing Synchronisation.

Written by Administrator

GSM

Saturday, 07 Novemb	per 2009 06:24 -
7 Hours	
Text Book:	
Optical net Morgan Kauffman	etworks: A practical perspective Kumar Sivarajan and Rajiv Ramaswamy
1998.	
Reference BOOk	(S:
 Optical Optical 	Communication Networks: Biswajit Mukherjee: TMG 1998. Networks, Ulysees Black: Pearson education 2007.

Saturday, 07 November 2009 06:24 -

Written by Administrator

Subject Code		:
IA Made	. 05	
IA Marks	: 25	
<u> </u>		
No. of Lecture Hrs/Week		: 04
Exam Hours	: 03	
Total no. of Lecture Hrs.		: 52

PART - A

Exam Marks

Unit - 1

GSM architecture and interfaces: Introduction, GSM frequency bands, GSM PLMN, Objectives of a GSM PLMN, GSM PLMN Services, GSM Subsystems, GSM Subsystems entities, GSM interfaces, The radio interface (MS to BSC), A

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interface (BTS to BSC), A interface (BSC to MSC), Interfaces between other GSM entities, Mapping of GSM layers onto OSI layers.

6 Hours

Written by Administrator Saturday, 07 November 2009 06:24 -
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Unit - 2
Radio link features in GSM systems: Introduction, Radio link measurements, Radio link features of GSM, Dynamic power control, Discontinuous transmission (DTX), SFH, Future techniques to reduce interface in GSM, Channel borrowing, Smart antenna.
5 Hours
Unit - 3
GSM logical channels and frame structure: Introduction, GSM logical channels, Allowed logical channel combinations, TCH multi frame for TCH/H, CCH multi frame, GSM frame structure, GSM bursts, Normal burst, Synchronization burst, Frequency correction channel burst, Access burst, Data encryption in GSM, Mobility management, Location registration, Mobile identification.

18 / 33

Written by Administrator Saturday, 07 November 2009 06:24 -

Unit - 4

Speech coding in GSM: Introduction, Speech coding methods, Speech code attributes, Transmission bit rate, Delay, Complexity, Quality, LPAS, ITU-T standards, Bit rate, Waveform coding, Time domain waveform coding, Frequency domain waveform coding, Vocoders, Full-rate vocoder, Half-rate vocoder. MESSAGES, SERVICES, AND CALL FLOWS IN GSM: Introduction, GSM PLMN services.

8 Hours

PART - B

Written by Administrator Saturday, 07 November 2009 06:24 -

Unit - 5

GSM messages, MS-BS interface, BS to MSC messages on the A interface, MSC to VLR and HLR, GSM call setup by an MS, Mobile-Terminated call, Call release, Handover. Data services, Introduction, Data interworking, GSM data services, Interconnection for switched data, Group 3 fax, Packet data on the signaling channel, User-to-user signaling, SMS, GSM GPRS.

7 Hours

Unit - 6

Privacy and security in GSM: Introduction, Wireless security requirements, Privacy of communications, Authentication requirements, System lifetime requirements, Physical requirements, SIM cards, Security algorithms for GSM, Token-based authentication, Token-based registration, Token-based challenge.

5 Hours

Unit - 7

Written by Administrator Saturday, 07 November 2009 06:24 -

Planning and design of a GSM wireless network: Introduction, Tele traffic models, Call model, Topology model, Mobility in cellular / PCS networks, Application of a fluid flow model, Planning of a wireless network, Radio design for a cellular / PCS network, Radio link design, Coverage planning, Design of a wireless system, Service requirements, Constraints for hardware implementation, Propagation path loss, System requirements, Spectral efficiency of a wireless system, Receiver sensitivity and link budget, Selection of modulation scheme, Design of TDMA frame, Relationship between delay spread and symbol rate, Design example for a GSM system.

8 Hours

Unit - 8

Management of GSM networks: Introduction, Traditional approaches to NM, TMN, TMN layers, TMN nodes, TMN interface, TMN management services, Management requirements for wireless networks, Management of radio resources, Personal mobility management, Terminal mobility, Service mobility management, Platform-centered management, SNMP, OSI systems management, NM interface and functionality, NMS functionality, OMC functionality, Management of GSM network, TMN applications, GSM information model, GSM containment tree, Future work items.

8 Hours

Saturday, 07 November 2009 06:24 -



"Principles of Applications of GSM", Vijay K. Garg & Joseph E. Wilkes, Pearson 1. education/PHI, 1999.

Reference BookS:

1. GSM: Evolution towards 3rd Generation Systems, (Editor), Z. Zvonar Peter Jung, Karl Kammerlander

Springer; 1

edition

1998

2. GSM & UMTS: The Creation of Global Mobile Communication, Friedhelm Hillebrand, John Wiley & Sons; 2001.

ADHOC WIRELESS NETWORKS

ELECTIVE -5 (GROUP E) Written by Administrator Saturday, 07 November 2009 06:24 -Subject Code : 25 IA Marks No. of Lecture Hrs/Week : 04 **Exam Hours** : 03 Total no. of Lecture Hrs. : 52 Exam Marks : 100 PART - A

Unit - 1

Ad hoc Networks: Introduction, Issues in Ad hoc wireless networks, Ad hoc wireless internet.

6 Hours

Written by Administrator Saturday, 07 November 2009 06:24 -
6 Hours
Unit - 2
MAC Protocols for Ad hoc wireless Networks: Introduction, Issues in designing a MAC protocol for Ad hoc wireless Networks, Design goals of a MAC protocol for Ad hoc wireless Networks, Classification of MAC protocols, Contention based protocols with reservation mechanisms.
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7 Hours
Unit - 3
Contention - based MAC protocols with scheduling mechanism, MAC protocols that use directional antennas, Other MAC protocols.
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ELECTIVE -5 (GROUP E) Written by Administrator Saturday, 07 November 2009 06:24 -Unit - 4 Routing protocols for Ad hoc wireless Networks: Introduction, Issues in designing a routing protocol for Ad hoc wireless Networks, Classification of routing protocols, Table drive routing protocol, On-demand routing protocol. 7 Hours PART - B Unit - 5

Hybrid routing protocol, Routing protocols with effective flooding mechanisms, Hierarchical

routing protocols, Power aware routing protocols.

6 Hours

25 / 33

Written by Administrator Saturday, 07 November 2009 06:24 -

Unit - 6

Transport layer protocols for Ad hoc wireless Networks: Introduction, Issues in designing a transport layer protocol for Ad hoc wireless Networks, Design goals of a transport layer protocol for Ad hoc wireless Networks, Classification of transport layer solutions, TCP over Ad hoc wireless Networks, Other transport layer protocols for Ad hoc wireless Networks.

7 Hours

Unit - 7

Security: Security in wireless Ad hoc wireless Networks, Network security requirements, Issues & challenges in security provisioning, Network security attacks, Key management, Secure routing in Ad hoc wireless Networks.

6 Hours

Unit - 8

Quality of service in Ad hoc wireless Networks: Introduction, Issues and challenges in

ELECTIVE -5 (GROUP E) Written by Administrator Saturday, 07 November 2009 06:24 providing QoS in Ad hoc wireless Networks, Classification of QoS solutions, MAC layer solutions, network layer solutions. 7 Hours **Text Book:** "Ad hoc wireless Networks", C. Siva Ram Murthy & B. S. Manoj, Pearson Education, 1. nd Edition, reprint 2005. 2

Reference Books:

"Ad hoc wireless Networks", Ozan K.
 "Ad hoc wireless Networking", Xiuzhen
 "Cheng, Xiao Hung, Ding-Zhu Du, Kluwer Academic publishers.

OPTICAL COMPUTING		
Subject Code		<u> </u> :
Subject Code		
A Marks	: 25	
A Marks	: 25	
A Marks	: 25	
	: 25	: 04
A Marks No. of Lecture Hrs/Week	: 25	: 04
	: 25	: 04
	: 25	: 04
No. of Lecture Hrs/Week		: 04
No. of Lecture Hrs/Week		: 04
No. of Lecture Hrs/Week		: 04

Written by Administrator Saturday, 07 November 2009 06:24 -

E	Exam Marks	: 100

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Unit - 1

Mathematical and Digital Image Fundamentals: Introduction, Fourier Transform, discrete Fourier transform, basic diffraction theory, Fourier transform property of lens, sampling and quantization, image enhancement, image restoration.

6 Hours

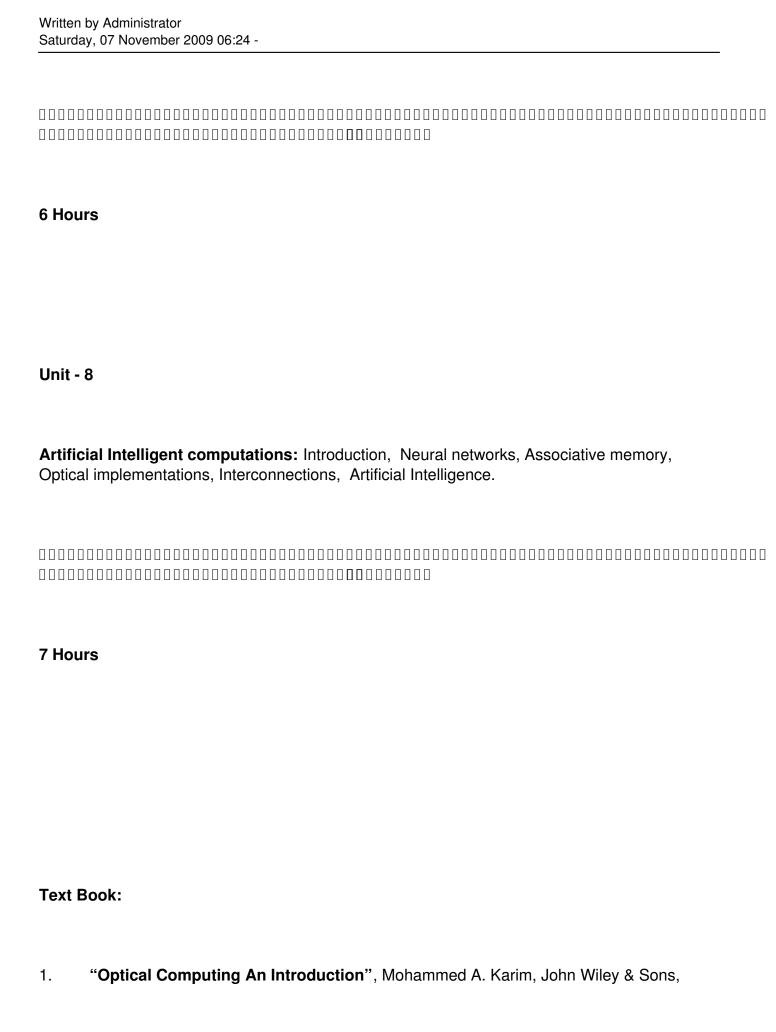
Unit - 2

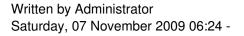
Liner Optical Processing: Introduction, photographic film, spatial filtering using binary filters, holography, inverse filtering, Deblurring.

Written by Administrator Saturday, 07 November 2009 06:24 -
6 Hours
Unit - 3
Analog Optical Arithmetic: Introduction, Halftone processing, nonlinear optical processing, Arithmetic operations.
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6 Hours
Unit - 4
Recognition using analog optical systems: Introduction, Matched filter, Joint transform correlation, Phase-only filter, Amplitude modulated recognition filters, Generalized correlation filter, Melllin transform based correlation.
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8 Hours
PART - B
Unit - 5

Written by Administrator Saturday, 07 November 2009 06:24 -

Digital optical computing devices: Introduction, Nonlinear devices, Integrated optics, Threshold devices, Spatial high modulators, Theta modulation devices.			
6 Hours			
Unit - 6			
Shadow-casting and symbolic substitution: Introduction, Shadow casting system and design algorithm, POSC logic operations, POSC multiprocessor, Parallel ALU using POSC, Sequential ALU using POSC, POSC image processing, Symbolic substitutions, Optical implementation of symbolic substitution, Limitations and challenges.			
7 Hours			
Unit - 7			
Optical Matrix Processing: Introduction, Multiplication, Multiplication using convolution, Matrix operations, Cellular logic architecture, Programmable logic array.			





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Reference Books:

1. **Optical** Signal Processing by Vanderlugnt John willy & sons NY 1992.

Signal Processing in Optics - Bradly G Boore Oxford University Press 1998