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Note : Remove "Table of Content" before including in CP Book

Each Course Plan shall be printed and made into a book with cover page

Blooms Level in all sections match with A.2, only if you plan to teach / learn at higher levels

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17CS52 : Computer Networks

A. COURSE INFORMATION

1. Course Overview

Degree:	BE	Program:	CS
Year / Semester :	5	Academic Year:	2018-19
Course Title:	Computer Networks	Course Code:	17CS52
Credit / L-T-P:	4-0-0	SEE Duration:	180 Minutes
Total Contact Hours:	50	SEE Marks:	80 Marks
CIA Marks:	15	Assignment	5 / 5Module
Course Plan Author:	Syeda Ayesha Unisa	Sign	
Checked By:		Sign	

2. Course Content

Module	Module Content	Teaching Hours	Module Concepts	Blooms Level
1	Application Layer: Principles of Network Applications: Network Application Architectures, Processes Communicating, Transport Services Available to Applications, Transport Services Provided by the Internet, The Web and HTTP: Overview of HTTP, Non-persistent and Persistent Connections, HTTP Message Format, User-Server Interaction: Cookies, Web Caching, the Conditional GET, File Transfer: FTP Commands & Replies, Electronic Mail in the Internet: SMTP, Comparison with HTTP, Mail Message Format, Mail Access Protocols, DNS; The Internet's Directory Service: Services Provided by DNS, Overview of How DNS Works, DNS Records and Messages, Peer-to-Peer Applications: P2P File Distribution, Distributed Hash Tables, Socket Programming: creating Network Applications: Socket Programming with UDP, Socket Programming with TCP.	10	Protocols, Networking	L2,L3
2	Between Transport and Network Layers, Overview of the Transport Layer in the Internet, Multiplexing and Demultiplexing: Connectionless Transport: UDP, UDP Segment Structure, UDP Checksum, Principles of Reliable Data Transfer: Building a Reliable Data Transfer Protocol Pipelined Reliable Data Transfer Protocols, Go-Back-N, Selective repeat, Connection-Oriented Transport TCP The TCP Connection, TCP Segment Structure, Round-Trip Time Estimation and Timeout, Reliable Data Transfer, Flow Control, TCP Connection Management, Principles of Congestion Control: The Causes and the Costs of Congestion, Approaches to Congestion Control, Network-assisted congestion-control example, ATM ABR Congestion control, TCP Congestion Control: Fairnes	10	Protocols Data transfer types	L2,L3
3	he Network layer: What's Inside a Router?: Input Processing, Switching, Output Processing, Where Does Queuing Occur? Routing control plane Pv6, A Brief foray into IP Security, Routing Algorithms: The Link-State (LS) Routing Algorithm, The Distance-Vector (DV) Routing Algorithm, Hierarchical Routing, Routing in the Internet.	10	Addressing Routing Algorithm	L3,L4
4	Mobile and Multimedia Networks: Cellular Internet Access: An Overview of Cellular Network Architecture, 3G Cellular Data Networks: Extending the Internet to Cellular subscribers On to 4G:LTE, Mobility management: Principles, Addressing, Routing	10	Wireless Networks protocols	L2,L3

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	to a mobile node, Mobile IP, Managing mobility in cellular Networks, Routing calls to a Mobile user, Handoffs in GSM, Wireless and Mobility: Impact on Higher-layer protocols.			
5	Multimedia Networking Applications: Properties of video, properties of Audio, Types of multimedia Network Applications, Streaming stored video: UDP Streaming, HTTP Streaming, Adaptive streaming and DASH, content distribution Networks, case studies: Netflix, You Tube and Kankan. Network Support for Multimedia: Dimensioning Best-Effort Networks, Providing Multiple Classes of Service, Diffserv, Per-Connection Quality-of- Service (QoS) Guarantees: Resource Reservation and Call Admission	10	Multimedia Networking Protocols	L2,L3

3. Course Material

Module	Details	Available
1	Text books	
	James F Kurose and Keith W Ross, Computer Networking, A Top-Down Approach, Sixth edition, Pearson,2017 .	In Lib
2	Reference books	
	Behrouz A Forouzan, Data and Communications and Networking, Fifth Edition, McGraw Hill, Indian Edition 2. Larry L Peterson and Bruce S Davie, Computer Networks, fifth edition, ELSEVIER	In dept
	3. Mayank Dave, Computer Networks, Second edition, Cengage Learning	
3	Others(Web,Video,notes,simulation etc)	
	vtuplanet.com/browse	

4. Course Prerequisites

SNo	Course Code	Course Name	Module / Topic / Description	Sem	Remarks	Blooms Level
1	15cs46	Data Communication	1. Knowledge on Networks	4/	Basic knowledge of TCP/IP Layers	L3
2	17cpl16 /26	CPL	4. Knowledge of Typologies	-	Different types of OSI layer	L3

Note: If prerequisites are not taught earlier, GAP in curriculum needs to be addressed. Include in Remarks and implement in B.5.

B. OBE PARAMETERS

1. Course Outcomes

#	COs	Teach. Hours	Concept	Instr Method	Assessment Method	Blooms' Level
	Students should be able to					

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17CS52.1	Learn the conceptual implementation Aspects of network Application	4	Overview of Application Layer	Lecture	Describe	L1,L2
17CS52.2	Analyze the networking protocols to support Application	6	Protocol	protocol	describe	L4
17CS52.3	Analyze the protocols services in TCP & UDP	5	Protocol	Discuss	Assignment	L4
17CS52.4	Reliable networking of data between end to end sem	5	Data transfer	PPT	Analyse	L4
17CS52.5	Learn the reliable deliver of data between end to end system	4	Addressing of Packets	Discuss	present	L3
17CS52.6	Compare Routers ,Internet Protocol in network layer	6	Routing of Packets	Tutorial	Analyze	L4
17CS52.7	Apply Wireless Networking in cellular Network in cellular network	6	Wireless Network	Lecture	Describe	L3
17CS52.8	Understand mobility management for impact on higher layer protocol	4	Mobile Network	Demonstrate	Presentatio on	L2
17CS52.9	The concept of Multimedia network	5	Multi media	Discuss	Assignment	L3
17CS52.10	Familiar the security issue in network Management	5	Network Management	oral	Seminar	L3
-	Total	50	-	-	-	-

Note: Identify a max of 2 Concepts per Module. Write 1 CO per concept.

2. Course Applications

SNo	Application Area	CO	Level
1	Acquires the knowledge of various types of concepts in Application layer	CO1	L2
2	Analyzes the different networking protocols used in Application Layer	CO2	L2,L3
3	Able to analyze the protocols and the services used in TCP & UDP	CO3	L2
4	Analyzes the delivery of data between end to end system	CO4	L3
5	Able to compare the routing algorithms for routing of packets	CO5	L2
6	Compare Routers Internet protocol in network layer	CO6	L3
7	Able to apply Wireless networking in wireless network	CO7	L4
8	Analyze the concept of Higher layer protocols in mobility management	CO8	L2
9	Analyzes the concept of multimedia network	CO9	L2
10	Able to analyze the security issue in Network management	CO10	L3

Note: Write 1 or 2 applications per CO.

3. Articulation Matrix

(CO – PO MAPPING)

#	Course Outcomes COs	Program Outcomes												Level	
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
17CS52	Learn the conceptual implementation Aspects of network Application	1	-	-	-	1	-	-	-	-	-	-	-	-	L2
17CS52	Analyze the networking protocols to support Application	1	-	-	2	-	1	-	-	-	2	-	-	L2	
17CS52	Analyze the protocols services in TCP & UDP	1	-	2	-	1	-	-	-	-	-	1	-	L2	
17CS52	Reliable networking of data	1	1	-	-	2	-	-	-	-	-	-	-	L3	

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	between end to end sem													
17CS52	Learn the reliable deliver of data between end to end system	1	-	2	-	1	-	-	-	-	-	-	-	L2
17CS52	Compare Routers ,Internet Protocol in network layer	1	1	2	-	1	-	-	-	-	-	-	-	L2
17CS52	Apply Wireless Networking in cellular Network in cellular network	-	1	-	-	1	-	-	-	-	-	-	1	L3
17CS52	Apply Wireless Networking in cellular Network in cellular network	-	-	1	-	1	-	-	-	-	-	-	-	L2
17CS52	The concept of Multimedia network	1	-	-	-	-	-	-	-	-	-	-	-	L2
17CS52	Familiar the security issue in network Management	-	-	-	-	-	-	-	-	-	1	-	1	L2
	Average													

4. Mapping Justification

Mapping		Justification	Mapping Level
CO	PO	-	-
CO1	PO1	To apply the basic knowledge of engineering fundamentals of networking applications	L2
CO1	PO5	To apply the appropriate knowledge in networking and to use different tools used in application layer	L2
CO2	PO1	To apply the basic knowledge of engineering specialization of networking	L2
CO2	PO4	Applying the reasoning of different protocols used in networking	L2
CO2	PO10	Communicates effectively in networking used by different network application to support different types of application	L2
CO3	PO1	To apply the basic knowledge of engineering fundamentals of TCP & UDP applications	L2
CO3	PO3	Designing the applications using the services of Transport layer services.	L2
CO3	PO5	To apply appropriate technique and apply the protocol services in TCP & UDP	L2
CO3	PO10	Outline the mechanisms Involved in transport layer	L2
CO4	PO1	Students will acquire knowledge Network Topologies and Prototypes	L3
CO4	PO2	To analyze different functionalities providing reliable data delivery by networking devices	L3
CO5	PO1	To apply the basic knowledge of engineering fundamentals of comparing the routing algorithms in networking applications	L2
CO5	PO3	Designing the solution to routing algorithms	L2
CO5	PO5	Static and dynamic routing protocols simulation ion will be familiarized for routing of packet	L2
CO6	PO1	To Establish the communication and reliable data transfer b/n end to end system	L2
CO6	PO2	Apply the knowledge of Routing protocol simulation in the field of network design and Implementation	L2
CO6	PO3	Students will be able to understand how these LAN Configuration	L2

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		and IP addressing is done in simulation mode of packet tracer too	
CO6	PO5	students in designing network. studies about the various networking device Configuration provide lifelong learning in the context of Network Designing	L2
CO7	PO2	Students will understand the Implementation of Routers and different protocol used in network layer	L3
CO7	PO5	Static and dynamic routing protocols simulation will be familiarized by the students	L3
CO7	PO12	Information acquired from routing protocol evaluation provides lifelong learning in the design of network.	L3
CO8	PO3	Students will be obtain basic knowledge of Implementing wireless networking using cellular network	L2
CO8	PO5	Students could apply the knowledge of wireless routing concepts for simulating the cellular network tool	L2
CO9	PO1	Students will be obtaining basic knowledge of wireless networking concepts	L2
CO10	PO10	Students could apply the knowledge of wireless networking concept for lifelong learning in the context of technological change	L2
CO10	PO12	Students will be Lifelong acquiring knowledge to apply the engineering skills in network design and implementation.	L2

Note: Write justification for each CO-PO mapping.

5. Curricular Gap and Content

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					

Note: Write Gap topics from A.4 and add others also.

6. Content Beyond Syllabus

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					
6					
7					
8					
9					

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Note: Anything not covered above is included here.

C. COURSE ASSESSMENT

1. Course Coverage

Module #	Title	Teaching Hours	No. of question in Exam						CO	Levels
			CIA-1	CIA-2	CIA-3	Asg	Extra Asg	SEE		
1	Application Layer	10	2	-	-	1	1	4	CO1, CO2	L1, L2
2	Transport Layer	10	2	-	-	1	1	4	CO3, CO4	L2, L3
3	Network Layer	10	-	2	-	1	1	3	CO5, CO6	L2, L3
4	Wireless and mobile network	10	-	2	-	1	1	4	CO7, CO8	L2, L3
5	Multimedia Networking	10	-	-	4	1	1	4	CO9, CO10	L3
-	Total	50	4	4	4	5	5	19	-	-

Note: Distinct assignment for each student. 1 Assignment per chapter per student. 1 seminar per test per student.

2. Continuous Internal Assessment (CIA)

Evaluation	Weightage in Marks	CO	Levels
CIA Exam - 1	30	CO1, CO2, CO3, CO4	L2, L3, L4, L2
CIA Exam - 2	30	CO5, CO6, CO7, CO8	L1, L2, L3, L4
CIA Exam - 3	30	CO9, CO10	L3, L1
Assignment - 1	05	CO1, CO2, CO3, CO4	L2, L3, L4, L3
Assignment - 2	05	CO5, CO6, CO7, CO8	L1, L2, L3, L1
Assignment - 3	05	CO9, CO10	L3, L4
Seminar - 1	-	-	-
Seminar - 2	-	-	-
Seminar - 3	-	-	-
Other Activities - define - Slip test	-	-	-
Final CIA Marks	30	-	-

Note : Blooms Level in last column shall match with A.2 above.

D1. TEACHING PLAN - 1

Module - 1

Title:	Application Layer	Appr Time:	10 Hrs
a	Course Outcomes	-	Blooms Level
-	The student should be able to:	-	Level
1	Acquires the knowledge of various types of concepts in Application layer	CO1	L2
2	Analyzes the different networking protocols used in Application Layer	CO2	L3

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b	Course Schedule	-	-
Class No	Module Content Covered	CO	Level
1	Application Layer: Principles of Network Applications: Network Application Architectures,	C01	L2
2	Processes Communicating, Transport Services Available to Applications	C01	L2
3	Transport Services Provided by the Internet	C01	L2
4	Application-Layer Protocols. The Web and HTTP: Overview of HTTP, Non-persistent and Persistent Connections	C01	L2
5	HTTP Message Format, User-Server Interaction: Cookies, Web Caching,	C01	L2
6	The Conditional GET, File Transfer: FTP Commands & Replies,	C01	L2
7	Electronic Mail in the Internet: SMTP, Comparison with HTTP, Mail	C02	L2
8	Message Format, Mail Access Protocols	C02	L2
9	DNS; The Internet's Directory Service:	C02	L2
10	Services Provided by DNS, Overview of How DNS Works, DNS Records and Messages, Peer-to-Peer Applications:	C02	L2
11	P2P File Distribution, Distributed Hash Tables, Socket Programming:	C02	L2
12	creating Network Applications: Socket Programming with UDP, Socket Programming with TCP.	C02	L2
c	Application Areas	CO	Level
1	Use of different protocols used in Application layers	CO1	L2
2	Used in Socket programming	CO2	L2
d	Review Questions	-	-
1	Explain the principles of network layer application	CO1	L1
2	Explain the transport services available to application	CO1	L3
3	Explain the application layer protocol	CO2	L2
4	Explain the difference between control and data connection in ftp	CO2	L3
5	Explain FTP command & Replies	CO2	L2

Module – 2

Title:	Transport Layer	Appr Time:	10 Hrs
a	Course Outcomes	-	Blooms Level
-	The student should be able to:	-	
1	Able to analyze the protocols and the services used in TCP & UDP	CO3	L3
2	Analyzes the delivery of data between end to end system	CO4	L3
b	Course Schedule	-	-
Class No	Module Content Covered	CO	Level
17	Introduction and Transport-Layer Services: Relationship Between Transport and Network Layers,	C03	L3
18	Overview of the Transport Layer in the Internet, Multiplexing and Demultiplexing:	C03	L2
19	Connection less Transport: UDP ,UDP Segment Structure, UDP Checksum	C03	L3
20	Principles of Reliable Data Transfer: Building a Reliable Data Transfer Protocol	C03	L2
21	Reliable Data Transfer Protocols, Go-Back-N, Selective repeat, Connection-Oriented Transport TCP:The TCP Connection	C03	L3
22	TCP Segment Structure, Round-Trip Time Estimation and Timeout,	C04	L2

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	Reliable Data Transfer, Flow Control		
23	TCP Connection Management, Principles of Congestion Control:	CO4	L3
24	The Causes and the Costs of Congestion, Approaches to Congestion Control,	CO4	L3
25	Network-assisted congestion-control example,	CO4	L1
26	ATM ABR Congestion control, TCP Congestion Control:	CO4	L3
c	Application Areas	CO	Level
1	Apply the protocol service in TCP & UDP	CO3	L3
2	Analyze reliable delivery of data between end to end system	CO4	L4
d	Review Questions	-	-
12	Explain the process of multiplexing and de multiplexing in transport layer?	CO3	L1
13	Explain connection oriented multiplexing and de multiplexing?	CO4	L3
14	State congestion and explain the cause of congestion?	CO3	L2
15	Discuss Go-Back-N protocol?	CO4	L4
16	Explain the congestion control in TCP?	CO4	L2
17	Elaborate three way hand shake in TCP?	CO3	L5
18	With a neat Diagram explain the TCP structure?	CO3	L2
19	Explain the principles of congestion control?	CO3	L3
e	Experiences	-	-

E1. CIA EXAM – 1

a. Model Question Paper - 1

Crs Code:	17CS52	Sem:	V	Marks:	30	Time:	75 minutes	
Course:	Computer Networks							
-	-	Note: Answer any 3 questions, each carry equal marks.				Marks	CO	Level
		MODULE-1(15 marks)						
1	a	Explain about network application architecture.				15	CO1	L1,L2
	b	Explain transport services available to application.					CO1	L2
2	a	Explain about file transfer(FTP)				15	CO1	L2
	b	Explain socket programming with respect to UDP.					CO2	L1,L2
		MODULE-2(15 marks)						
3	a	Explain HTTP request message format.				15	CO1	L1
	b	Explain HTTP response message format.					CO1	L1
4	a	Explain socket programming with respect to TCP.				15	CO2	L1,L2
	b	With an example, illustrate the basic operation of SMTP.					CO1	L1,L2

b. Assignment -1

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions								
Crs Code:	17CS52	Sem:	V	Marks:	30	Time:	75 minutes	
Course:	Computer Network							
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.								
SNo	USN	Assignment Description				Marks	CO	Level
1		Explain the principles of network layer Application?				5	CO1	L2
2		Compare Client server and peer to peer Architecture?				5	CO2	L3

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3	Explain the application layer protocols?	5	CO2	L3
4	Explain the overview of HTTP?	5	CO1	L3
5	Write a note on web caching?	5	CO1	L3
6	Explain the different services provided b DNS?	5	CO2	L3
7	Describe the HTTP persistent and non persistent connection?	5	CO2	L3
8	Explain the basic operation of SMTP with example?	5	CO1	L3
9	Demonstrate socket implementation using TCP?	5	CO1	L3
10	Explain p2p File distribution & distributed hash tables?	5	CO2	L2
11	Demonstrate socket implementation using UDP?	5	CO2	L2

D2. TEACHING PLAN - 2

Module – 3

Title:	Network Layer	Appr Time:	10 Hrs
a	Course Outcomes	-	Blooms Level
-	The student should be able to:	-	Level
1	Learn the reliable deliver of data between end to end system	CO5	L2
2	Compare Routers ,Internet Protocol in network layer	CO6	L3
b	Course Schedule		
Class No	Module Content Covered	CO	Level
1	What\'s Inside a Router?: Input Processing, Switching,Output Processing,	CO5	L2
2	Where Does Queuing Occur	CO5	L2
3	Routing control plane, IPv6,A Brief foray into IP Security	CO5	L2
4	Routing Algorithms: The Link-State (LS) Routing Algorithm	CO5	L2
5	The Distance-Vector (DV) Routing Algorithm, Hierarchical Routing	CO5	L2
6	Routing in the Internet, Intra-AS Routing in the Internet	CO5	L3
7	RIP, Intra-AS Routing in the Internet	CO6	L3
8	OSPF, Inter/AS Routing	CO6	L3
9	BGP, Broadcast Routing Algorithms and Multicast.	CO6	L3
c	Application Areas	CO	Level
1	Compare Routing Algorithms for Routing protocols	CO5	L3
2	Compare Routers ,Internet protocol in network layer	CO6	L4
d	Review Questions	-	-
1	What is routing? Explain the structure of router?	CO5	L1
2	Explain IPV6 packet format?	CO5	L3
3	Explain different routing algorithm?	CO5	L2
4	Write link state routing algorithm?	CO5	L4
5	Elaborate the path attribute in BGP?	CO6	L2
6	Explain the steps to select BGP routers?	CO6	L4
7	Explain the hierarchical routing in internet?	CO6	L2
8	Discuss Intra -AS and inter -AS Routing in the internet?	CO6	L3
9	List the broadcast algorithm Explain any one of them?	CO6	L4
e	Experiences	-	-

Module – 4

Title:	Wireless and Mobile Network	Appr Time:	10Hrs
a	Course Outcomes	-	Blooms

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-	The student should be able to:	-	Level
1	Able to apply Wireless networking in wireless network	CO7	L2
2	Analyze the concept of Higher layer protocols in mobility management	CO8	L3
b Course Schedule			
Class No	Module Content Covered	CO	Level
1	Cellular Internet Access: An Overview of Cellular Network Architecture	CO7	L3
2	3G Cellular Data Networks: Extending the Internet to Cellular subscribers,	CO7	L3
3	On to 4G:LTE,Mobility management: Principles, Addressing	CO7	L3
4	Routing to a mobile node, Mobile IP, Managing mobility in cellular Networks	CO8	L3
5	Routing calls to a Mobile user,	CO8	L3
6	Handoffs in GSM, Wireless and Mobility:	CO8	L3
7	Impact on Higher-layer protocols.	CO8	L3
c	Application Areas	CO	Level
1.	Apply Wireless network in in cellular networks	CO7	L3
2.	Analyze Mobility management for impact on higher layer protocol	CO8	L3
d Review Questions			
1	Explain the cellular Internet access?	CO7	L1
2	Discuss the architecture of cellular network?	CO7	L3
3	State the components of GS 2G cellular network architecture with a diagram?	CO8	L2
4	Write a note on mobile IP?	CO7	L4
5	Illustrate the steps involved in mobile IP registration with home agent?	CO8	L2
6	Define hand off explain the steps in accomplishing hand off?	CO8	L5
7	Compare the 4G LTE standard to 3G system?	CO8	L2
8	Explain the mechanism of direct routing to mobile node in mobility management?	CO8	L3
e Experiences			
		-	-

E2. CIA EXAM – 2

a. Model Question Paper - 2

Crs Code:	17CS52	Sem:	V	Marks:	30	Time:	75 minutes	
Course:	Compuer Networks							
-	-	Note: Answer any 2 questions, each carry equal marks.				Marks	CO	Level
Module -1(15 Marks)					15			
1	a	What is flow control? Explain.					CO2	L3
	b	Explain Reliable Data Transfer.					CO3	L3
2	a	Explain TCP three-way handshake.					CO3	L4
	b	Explain about UDP segment structure.					CO3	L3
MODULE-2(15 marks)					15	CO3	L3	
3	a	Explain UDP checksum.					CO3	L4
	b	Explain about TCP segment structure.						
						CO3	L4	
4	a	Explain connection-oriented multiplexing and demultiplexing.					CO3	L4
	b	Explain connectionless multiplexing and demultiplexing.					CO2	L3

b. Assignment – 2

Note: A distinct assignment to be assigned to each student.

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Model Assignment Questions

Crs Code: 17CS52	Sem: v	Marks: 30	Time: 75 minutes
Course: Computer Networks			

Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.

SNo	USN	Assignment Description	Marks	CO	Level
1		Explain the process of multiplexing and de multiplexing in transport layer?	5	L1	L2
2		Explain connection oriented multiplexing and de multiplexing?	5	L3	L3
3		State congestion and explain the cause of congestion?	5	L2	L4
4		Discuss Go-Back-N protocol?	5	L4	L3
5		Explain the congestion control in TCP?	5	L2	L4
6		Elaborate three way hand shake in TCP?	5	L5	L2
7		With a neat Diagram explain the TCP structure?	5	L2	L3
8		Explain the principles of congestion control?	5	L3	L4

D3. TEACHING PLAN - 3

Module - 5

Title:	Multimedia Networking	Appr Time:	10 Hrs
a	Course Outcomes	-	Blooms Level
-	The student should be able to:	-	
1	Analyzes the concept of multimedia network	CO9	L2
2	Able to analyze the security issue in Network management	CO10	L3
b	Course Schedule		
Class No	Module Content Covered	CO	Level
1.	Multimedia Networking: Properties of video, properties of Audio	CO9	L3
2.	Types of multimedia Network Applications, Streaming stored video: UDP Streaming	CO9	L3
3.	HTTP Streaming, Adaptive streaming and DASH, content distribution Networks, case studies:	CO9	L3
4.	Netflix, You Tube and Kankan.	CO9	L3
5.	Network Support for Multimedia: Dimensioning Best-Effort Networks,	CO10	L3
6.	Providing Multiple Classes of Service,	CO10	L3
7.	Diffserv, Per-Connection Quality-of-Service (QoS) Guarantees	CO10	L3
8.	Resource Reservation and Call Admission	CO10	L3
c	Application Areas	CO	Level
1	Analyze the concept of multimedia Networks	CO10	L3
2	Familiar with the security issue in network management	CO9	L4
d	Review Questions	-	-
1	Explain the properties of Audio and Video?	CO9	L2
2	Explain the types of multimedia networking application?	CO9	L3
3	Elaborate the feature of steaming stored video?	CO9	L2
4	With a neat diagram explain the CDN operation?	CO10	L4
5	Explain the limitation of best effort IP service?	CO10	L2
6	Describe the leaky bucket policy mechanism?	CO10	L5
7	Discuss the round robin and waited fair queuing scheduling mechanism?	CO10	L2
e	Experiences	-	-

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E3. CIA EXAM – 3

a. Model Question Paper - 3

Crs Code:	17CS52	Sem:	V	Marks:	30	Time:	75 minutes	
Course:	Computer Networks							
-	-	Note: Answer any 2 questions, each carry equal marks.				Marks	CO	Level
		Module -1(15 Marks)				15		
1	a	Explain the properties of Video.					CO9	L2
	b	Explain the properties of Audio					CO9	L2
2	a	Explain about HTTP Streaming.					CO9	L2
	b	With general format explain the various fields of RTP?					CO10	L3
		Module -2(15 Marks)				15		
3	a	Explain adaptive streaming and DASH.					CO10	L1
	b	Explain i)Netflix ii)YouTube iii)Kankan					CO10	L2
4	a	Explain the types of multimedia network applications.					CO10	L2
	b	Explain about the UDP streaming.					CO10	L2

b. Assignment – 3

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions								
Crs Code:	17CS52	Sem:	V	Marks:	5 / 10	Time:	75 minutes	
Course:	Computer Networks							
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.								
SNo	USN	Assignment Description				Marks	CO	Level
1		Explain the cellular Internet access?				5	CO7	l3
2		Discuss the architecture of cellular network?				5	CO7	l3
3		State the components of GS 2G cellular network architecture with a diagram?				5	CO8	l3
4		Write a note on mobile IP?				5	CO8	l3
5		Illustrate the steps involved in mobile IP registration with home agent?				5	CO8	l3
6		Explain the properties of Audio and Video?				5	CO9	l2
7		Explain the types of multimedia networking application?				5	CO9	l3
8		Elaborate the feature of steaming stored video?				5	CO9	l3
9		With a neat diagram explain the CDN operation?				5	CO10	l3
10		Explain the limitation of best effort IP service?				5	CO10	l3
11		What are the four main RTP header filed?				5	CO10	l3
12		What is the purpose of RSVP?				5	CO10	l3

F. EXAM PREPARATION

1. University Model Question Paper

Course:	Computer Networks				Month / Year	May /2018		
Crs Code:	CS501PC	Sem:	V	Marks:	80	Time:	180 minutes	
-	Note	Answer all FIVE full questions. All questions carry equal marks.				Marks	CO	Level
1	a	What are the different types of transport services provided by the internet?				16 / 20	CO1	L3
	b	Compose logical note on proxy—server with suitable diagram						L3
		OR						
2	a	Discuss how files are distributed in peer-to-peer application.				16 / 20	CO1	L3
	b	Design network application using socket programming with UDP					CO2	L4

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3	a	Describe the various fields of UDP segment. Explain how Checksum is calculated	16 / 20	CO3	L3
	b	Design rdt 2.0 protocol.			L2
		OR			
4	a	With a neat sketch, explain the TCP segment and its services.	16 / 20	CO3	L3
	b	Explain how connection is established and tear down in TCP.		CO4	L3
5	a	Draw IPv6 datagram format, mention the significance of each fields	16 / 20	CO5	L3
	b	Explain Distance vector algorithm?			
		OR			
6	a	illustrate Routing Information Protocol (RIP) with suitable diagram	16 / 20	CO5	L4
	b	Explain spanning tree algorithm			L3
7	a	Define cellular network. Give the overview of GSM cellular network architecture.	16 / 20	CO7	L3
	b	Explain the two different types of routing approaches to mobile node			L4
		OR			
8	a	Explain the following concepts of mobile—IP : i) Agent discovery ii) Registration with home agent	16 / 20	CO7	L4
	b	Illustrate the steps involved when a base station does decide to hand-off a mobile user		CO8	L3
9	a	Brief out three broad categories of multimedia network applications.	16 / 20	CO9	L3
	b	Discuss the followings : i) Adaptive streaming ii) DASH.		CO10	L3
		OR			
10	a	With general format, explain the various fields of RTP.	16 / 20	CO9	L3
	b	Explain the working procedure of leaky bucket algorithm.		CO10	L3

2. SEE Important Questions

Course:	Computer Networks			Month / Year	May / 2018		
Crs Code:	17CS52	Sem:	5	Marks:	80	Time:	180 minutes
	Note	Answer all FIVE full questions. All questions carry equal marks.				-	-
Module	Qn	Important Question			Marks	CO	Year
1	1	What are the different types of transport services provided by the internet?			16 / 20	CO3	2018
	3	Discuss how files are distributed in peer-to-peer application.				CO3	2018
	4	Design network application using socket programming with UDP				CO3	2018
2	1	Describe the various fields of UDP segment. Explain how Checksum is calculated			16 / 20	CO3	2018
	2	Design rdt 2.0 protocol.				CO3	2018
	3	With a neat sketch, explain the TCP segment and its services.				CO3	2018
	4	Explain how connection is established and tear down in TCP.				CO3	2018
3	1	Draw IPv6 datagram format, mention the significance of each fields			16 / 20	CO4	2018
	2	Explain Distance vector algorithm?				CO5	2018
	3	Explain spanning tree algorithm				CO5	2018

Logo

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4	1	Explain the cellular Internet access?	16 / 20	CO6	2018
	2	Discuss the architecture of cellular network?		CO7	2018
	3	Explain the following concepts of mobile—IP : i) Agent discovery ii) Registration with home agent		CO	2018
	4	Illustrate the steps involved when a base station does decide to hand-off a mobile user		CO8	2018
5	1	With general format, explain the various fields of RTP.	16 / 20	CO9	2018
	2	Explain the working procedure of leaky bucket algorithm.		CO10	2018
	2	Discuss the followings : i) Adaptive streaming ii) DASH.		CO10	2018