

## Model Question Paper-1 with effect from 2018-19 (CBCS Scheme)

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### Fifth Semester B.E. Degree Examination COMPUTER NETWORKS AND SECURITY

TIME: 03 Hours

Max. Marks: 100

Note: Answer any **FIVE** full questions, choosing **ONE** question from each **Module**.

Module – 1			
<b>Q.1</b>	(a)	Explain client-server and Peer-to-Peer architecture	6Marks
	(b)	Define Socket. Demonstrate the working of TCP Socket	8Marks
	(c)	Explain the working of BitTorrent for file distribution.	6Marks
<b>OR</b>			
<b>Q.2</b>	(a)	Describe in detail the services offered by DNS and explain DNS message format.	8Marks
	(b)	Compare HTTP and SMTP	4Marks
	(c)	With a diagram explain the interaction of the various DNS servers.	8Marks
<b>Module – 2</b>			
<b>Q.3</b>	(a)	Explain the concept of transport layer Multiplexing and De-multiplexing.	6Marks
	(b)	With neat diagram, explain TCP segment structure and its fields.	6Marks
	(c)	Explain in brief, TCP congestion control mechanism.	8Marks
<b>OR</b>			
<b>Q.4</b>	(a)	Explain the stop and wait protocol with FSM representation rdt2.1	8Marks
	(b)	With neat diagram, explain Selective Repeat protocol.	6Marks
	(c)	Explain in brief, TCP connection Management process.	6Marks
<b>Module – 3</b>			
<b>Q.5</b>	(a)	Explain the three switching techniques	6Marks
	(b)	Explain distance vector algorithm.	7 Marks
	(c)	Write the link state algorithm and apply it to the following graph with source node is 'A'	7 Marks

<b>OR</b>			
<b>Q.6</b>	<b>(a)</b>	With general format, explain various fields of IPv6.	6Marks
	<b>(b)</b>	List the broadcast routing algorithms. Explain any two of them	7Marks
	<b>(c)</b>	Explain the intra-AS routing protocol in detail	7Marks
<b>Module – 4</b>			
<b>Q.7</b>	<b>(a)</b>	What are the elements of network security? Explain the threats to network security.	8Marks
	<b>(b)</b>	Briefly explain the steps of DES algorithm.	6Marks
	<b>(c)</b>	Discuss about (i) Cryptographic techniques (ii) Authentication techniques	6Marks
<b>OR</b>			
<b>Q.8</b>	<b>(a)</b>	Explain RSA algorithm. Using RSA algorithm encrypt a message $m=9$ . Assume $p=3$ and $q=11$ . Find the public and private keys and also show the cipher text.	8Marks
	<b>(b)</b>	Discuss the Secure Hash Algorithm.	6Marks
	<b>(c)</b>	Write a note on firewalls.	6Marks
<b>Module – 5</b>			
<b>Q.9</b>	<b>(a)</b>	Briefly explain the properties of Audio and Video	8Marks
	<b>(b)</b>	List the categories of streaming of stored video. Explain any one of them	8Marks
	<b>(c)</b>	Explain the RTP protocol header fields	4Marks
<b>OR</b>			
<b>Q.10</b>	<b>(a)</b>	With neat diagram explain CDN operation	8Marks
	<b>(b)</b>	Discuss the following (i) Adaptive Streaming (ii) DASH	8Marks
	<b>(c)</b>	Give the limitations of best effort IP service	4Marks

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome				
Question		Bloom's Taxonomy Level attached	Course Outcome	Programme Outcome
Q.1	(a)	L1	CO1	PO1,PO3
	(b)	L2	CO1	PO1,PO3
	(c)	L2	CO1	PO1, PO3
Q.2	(a)	L1	CO1	PO1, PO3
	(b)	L2	CO1	PO1, PO3
	(c)	L2	CO1	PO1, PO3
Q.3	(a)	L2	CO2	PO1,PO3,PO4
	(b)	L2	CO2	PO1,PO3,PO4
	(c)	L2	CO2	PO1,PO3,PO4
Q.4	(a)	L2	CO2	PO1,PO3,PO4
	(b)	L2	CO2	PO1,PO3,PO4
	(c)	L1	CO2	PO1,PO3,PO4
Q.5	(a)	L1	CO3	PO1,PO2,PO3
	(b)	L2	CO3	PO1,PO2,PO3
	(c)	L3	CO3	PO1,PO2,PO3
Q.6	(a)	L2	CO3	PO1,PO2,PO3
	(b)	L2	CO3	PO1,PO2,PO3
	(c)	L2	CO3	PO1,PO2,PO3
Q.7	(a)	L1	CO4	PO1,PO2,PO3
	(b)	L2	CO4	PO1,PO2,PO3
	(c)	L1	CO4	PO1,PO2,PO3
Q.8	(a)	L3	CO4	PO1,PO2,PO3
	(b)	L2	CO4	PO1,PO2,PO3
	(c)	L1	CO4	PO1,PO2,PO3
Q.9	(a)	L1	CO5	PO1,PO2,PO3
	(b)	L1	CO5	PO1,PO2,PO3
	(c)	L2	CO5	PO1,PO2,PO3
Q.10	(a)	L2	CO5	PO1,PO2,PO3
	(b)	L1	CO5	PO1,PO2,PO3
	(c)	L1	CO5	PO1,PO2,PO3
Bloom's Taxonomy Levels	<b>Lower order thinking skills</b>			
	Remembering( knowledge): $L_1$	Understanding Comprehension): $L_2$	Applying (Application): $L_3$	
	<b>Higher order thinking skills</b>			
	Analyzing (Analysis): $L_4$	Valuating (Evaluation): $L_5$	Creating (Synthesis): $L_6$	



## Model Question Paper-1 with effect from 2019-20 (CBCS Scheme)

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### Fifth Semester B.E. Degree Examination Computer Networks and Security

TIME: 03 Hours

Max. Marks: 100

- Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.  
02.  
03.

Module – 1			Marks
<b>Q.1</b>	(a)	Differentiate between i) HTTP & FTP ii) SMTP & HTTP iii) UDP & TCP .	10
	(b)	Explain cookies and web caching with diagram.	10
<b>OR</b>			
<b>Q.2</b>	(a)	Discuss the working of Domain Name Service.	10
	(b)	Demonstrate client server socket programming application using TCP.	10
<b>Module – 2</b>			
<b>Q.3</b>	(a)	Illustrate TCP & UDP segment structure with a help of diagram.	10
	(b)	With a neat diagram, demonstrate the working of GO-BACK-N protocol.	10
<b>OR</b>			
<b>Q.4</b>	(a)	Describe TCP connection management with a help of diagram.	10
	(b)	Interpret the FSM of TCP congestion control.	10
<b>Module – 3</b>			
<b>Q.5</b>	(a)	With a help of neat diagram explain virtual circuit diagram and Datagram network.	6

	(b)	Explain router architecture.	6
	(c)	Illustrate the following i)IPv4 Addressing ii)IP fragmentation iii)Subnet Addressing	8
<b>OR</b>			
<b>Q.6</b>	(a)	Explain Dijkstra's algorithm with example.	10
	(b)	Explain various broadcast routing algorithms.	10
<b>Module – 4</b>			
<b>Q.7</b>	(a)	Explain Feistel structure of DES Algorithm.	10
	(b)	Explain RSA Algorithm with an example.	10
<b>OR</b>			
<b>Q.8</b>	(a)	Explain Diffie-Hellman Key-Exchange Protocol.	6
	(b)	With a help of neat diagram explain computation of SHA-1.	8
	(c)	Explain different types of Firewall.	6
<b>Module – 5</b>			
<b>Q.9</b>	(a)	Explain the properties of audio and video.	8
	(b)	With a help of neat diagram explain streaming stored video over HTTP/TCP.	6
	(c)	Explain CDN Operation.	6
<b>OR</b>			
<b>Q.10</b>	(a)	Explain Interleaving mechanism.	6
	(b)	Explain RTP Basics and RTP Packet.	6
	(c)	With a diagram, explain SIP call establishment.	8

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome				
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Q.1	(a)	$L_3$	CO1	PO1
	(b)	$L_2$	CO1	PO1
Q.2	(a)	$L_2$	CO1	PO1
	(b)	$L_3$	CO1	PO1
Q.3	(a)	$L_2$	CO2	PO2
	(b)	$L_2$	CO2	PO2
Q.4	(a)	$L_2$	CO2	PO2
	(b)	$L_3$	CO2	PO2
Q.5	(a)	$L_2$	CO3	PO2
	(b)	$L_2$	CO3	PO2
	(c)	$L_3$	CO3	PO2
Q.6	(a)	$L_2$	CO3	PO2
	(b)	$L_2$	CO3	PO2
Q.7	(a)	$L_2$	CO4	PO2
	(b)	$L_2$	CO4	PO2
Q.8	(a)	$L_2$	CO4	PO2
	(b)	$L_2$	CO4	PO2
	(c)	$L_2$	CO4	PO2
Q.9	(a)	$L_2$	CO5	PO2
	(b)	$L_2$	CO5	PO2
	(c)	$L_2$	CO5	PO2
Q.10	(a)	$L_2$	CO5	PO2
	(b)	$L_2$	CO5	PO2
	(c)	$L_2$	CO5	PO2
Bloom's Taxonomy Levels	<b>Lower order thinking skills</b>			
	Remembering( knowledge): $L_1$	Understanding Comprehension): $L_2$	Applying (Application): $L_3$	
	<b>Higher order thinking skills</b>			
	Analyzing (Analysis): $L_4$	Valuating (Evaluation): $L_5$	Creating (Synthesis): $L_6$	

