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

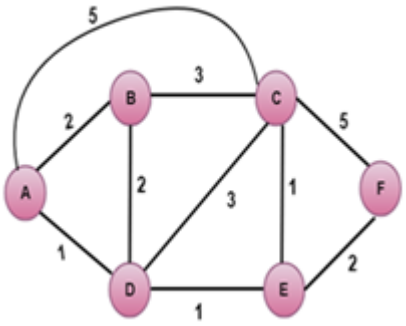
USN | | | | | | | | | | |

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	
Q.1	**(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
		OR	
Q.2	**(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
		Module – 2	
Q.3	**(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
		OR	
Q.4	**(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
		Module – 3	
Q.5	**(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

		OR	
Q.6	**(a)**	With general format, explain various fields of IPv6.	6Marks
	(b)	List the broadcast routing algorithms. Explain any two of them	7Marks
	(c)	Explain the intra-AS routing protocol in detail	7Marks
		Module – 4	
Q.7	**(a)**	What are the elements of network security? Explain the threats to network security.	8Marks
	(b)	Briefly explain the steps of DES algorithm.	6Marks
	(c)	Discuss about (i) Cryptographic techniques (ii) Authentication techniques	6Marks
		OR	
Q.8	**(a)**	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)	Discuss the Secure Hash Algorithm.	6Marks
	(c)	Write a note on firewalls.	6Marks
		Module – 5	
Q.9	**(a)**	Briefly explain the properties of Audio and Video	8Marks
	(b)	List the categories of streaming of stored video. Explain any one of them	8Marks
	(c)	Explain the RTP protocol header fields	4Marks
		OR	
Q.10	**(a)**	With neat diagram explain CDN operation	8Marks
	(b)	Discuss the following (i) Adaptive Streaming (ii) DASH	8Marks
	(c)	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	C01	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	**Lower order thinking skills**		
	Remembering(knowledge):L_1	Understanding Comprehension): L_2	Applying (Application): L_3
	Higher order thinking skills		
	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
Q.1	(a)	Differentiate between i) HTTP & FTP ii) SMTP & HTTP iii) UDP & TCP .	10
	(b)	Explain cookies and web caching with diagram.	10
		OR	
Q.2	(a)	Discuss the working of Domain Name Service.	10
	(b)	Demonstrate client server socket programming application using TCP.	10
		Module – 2	
Q.3	(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
		OR	
Q.4	(a)	Describe TCP connection management with a help of diagram.	10
	(b)	Interpret the FSM of TCP congestion control.	10
		Module – 3	
Q.5	(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
OR			
Q.6	**(a)**	Explain Dijkstra's algorithm with example.	10
	(b)	Explain various broadcast routing algorithms.	10
Module – 4			
Q.7	**(a)**	Explain Feistel structure of DES Algorithm.	10
	(b)	Explain RSA Algorithm with an example.	10
OR			
Q.8	**(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
Module – 5			
Q.9	**(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
OR			
Q.10	**(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

Question		Bloom's Taxonomy Level attached	Course Outcome	Programme Outcome
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			
	Lower order thinking skills		
	Remembering(knowledge):L_1	Understanding Comprehension): L_2	Applying (Application): L_3
	Higher order thinking skills		
	Analyzing (Analysis): L_4	Valuating (Evaluation): L_5	Creating (Synthesis): L_6