

# University of Mumbai

## Sample Question Paper

Examinations Commencing from 7<sup>th</sup> January 2021 to 20<sup>th</sup> January 2021

Program: Computer Engineering

Curriculum Scheme: Rev 2016

Examination: TE Semester V

Course Code: CSC 503 and Course Name: Computer Network

Time: 2 hour

Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which network topology requires a central hub?
Option A:	Star
Option B:	Mesh
Option C:	Bus
Option D:	Ring
2.	_____ is the end device in computer network.
Option A:	Router
Option B:	NIC
Option C:	Transceiver
Option D:	Computer
3.	What is subnetting?
Option A:	Connect a new network to an existing network
Option B:	Split a large network into multiple small networks.
Option C:	Combine multiple small networks in a single large network.
Option D:	Enable network to accept more hosts
4.	The size of IPv6 is
Option A:	32 bits
Option B:	124 bits
Option C:	128 bits
Option D:	128 bytes
5.	What is jitter?
Option A:	Latency of network.
Option B:	Variance of delay.
Option C:	Variance of available bandwidth.
Option D:	Length of the queue at different router.
6.	Protocol data unit (PDU) of transport layer is called
Option A:	Bit
Option B:	Frame
Option C:	Segment
Option D:	Packet
7.	_____ connector is used in fiber optic cable.
Option A:	BNC
Option B:	RJ-45
Option C:	RJ-25
Option D:	ST

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8.	Bluetooth technology uses the _____ ISM spectrum band.
Option A:	2.4 Hz
Option B:	2.4 MHz
Option C:	2.4 GHz
Option D:	2.4 KHz
9.	An endpoint of an inter-process communication flow across a computer network is called
Option A:	Socket
Option B:	Pipe
Option C:	Port
Option D:	Machine
10.	Which of the following is the correct statement?
Option A:	TCP is unreliable, IP is unreliable
Option B:	TCP is reliable, IP is unreliable
Option C:	TCP is unreliable, IP is reliable
Option D:	TCP is reliable, IP is reliable
11.	What is the header size of UDP
Option A:	8 bytes
Option B:	16 bytes
Option C:	32 bytes
Option D:	4 bytes
12.	What of the following Transport Primitive is used for BERKLEY Sockets?
Option A:	LISTEN,CONNECT,SEND, DISCONNECT
Option B:	SOCKET, BIND, LISTEN, ACCEPT
Option C:	RECEIVE, LISTEN, SEND, CONNECT
Option D:	DISCONNECT, LISTEN,CONNECT,SEND
13.	Consider the noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels. The maximum bit rate can be
Option A:	600 bps
Option B:	5000 bps
Option C:	6000 bps
Option D:	4000 bps
14.	I frame carries _____ information.
Option A:	Data
Option B:	Data + control
Option C:	Control
Option D:	System
15.	Which layer decides the data transmission rate?
Option A:	Network layer er
Option B:	Physical layer
Option C:	Datalink layer
Option D:	Transport layer

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16.	Which device forwards packets between networks by processing the routing information included in the packet?
Option A:	Bridge
Option B:	Firewall
Option C:	Router
Option D:	Hub
17.	In Selective repeat ARQ, window size is _____ on sender and receiver side.
Option A:	1
Option B:	n-1
Option C:	$2^{(n-1)}$
Option D:	$2^n$
18.	What is the binary equivalent of the following polynomial arithmetic $x^7 + x^6 + x^5 + x^2 + 1$
Option A:	11100111
Option B:	11101101
Option C:	11100101
Option D:	11011101
19.	Which of the following networks use store-and-forward switching operation?
Option A:	Telephone networks
Option B:	Telegraph networks
Option C:	Wireless Networks
Option D:	Computer networks
20.	_____ is used for remote login.
Option A:	TCP
Option B:	UDP
Option C:	HTTP
Option D:	Telnet

### Option 3

<b>Q2</b> <b>(20 Marks Each)</b>																
A	<b>Solve any Two 5 marks each</b>															
i.	List out application layer protocols & Explain any one.															
ii.	Explain the use of TCP timers in detail?															
iii.	Write short note on i) DHCP ii) SMTP															
B	<b>Solve any One 10 marks each</b>															
i.	Explain Berkeley socket primitives with neat diagram.															
ii.	Suppose a router has built up the routing table as shown below. The router can deliver packets directly over interfaces 0 and 1, or it can forward packets to routers R2, R3 or R4. Design the n/w & show how the router forwards packets addressed to each of the following destinations: (a)128.96.39.10(b)128.96.40.12(c) 128.96.40.151 (d) 192.4.153.17 (e) 192.4.153.90															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Subnet address</th> <th style="width: 33%;">Subnet mask</th> <th style="width: 33%;">Next hop</th> </tr> </thead> <tbody> <tr> <td>128.96.39.0</td> <td>255.255.255.128</td> <td>Interface 0</td> </tr> <tr> <td>128.96.39.128</td> <td>255.255.255.128</td> <td>Interface 1</td> </tr> <tr> <td>128.96.40.0</td> <td>255.255.255.192</td> <td>R2</td> </tr> <tr> <td>192.4.153.0</td> <td>255.255.255.192</td> <td>R3</td> </tr> </tbody> </table>	Subnet address	Subnet mask	Next hop	128.96.39.0	255.255.255.128	Interface 0	128.96.39.128	255.255.255.128	Interface 1	128.96.40.0	255.255.255.192	R2	192.4.153.0	255.255.255.192	R3
Subnet address	Subnet mask	Next hop														
128.96.39.0	255.255.255.128	Interface 0														
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128.96.40.0	255.255.255.192	R2														
192.4.153.0	255.255.255.192	R3														

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Q3 (20 Marks Each)	
A	<i>Solve any Two 5 marks each</i>
i.	What is count to infinity problem in distance vector routing?
ii.	Why there is need for congestion control? Explain closed loop congestion control policy?
iii.	In GB4 if every 6 <sup>th</sup> frame that is being transmitted is lost and if we have to send 10 frames then how many transmissions are required?
B	<i>Solve any One 10 marks each</i>
i.	Differentiate Leaky Bucket algorithm and Token Bucket algorithm.
ii.	Define DNS? Explain recursive name resolution and Iterative name resolution?