University of Mumbai

Examinations Summer 2022

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2019

Examination: Third Year SemesterVI

Course Code: ECC 602 and Course Name: Computer Communication Network

==========

QUESTION BANK

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	RJ-45 UTP Cable has ……. Cables.
Option A:	5 pair
Option B:	4 pair
Option C:	2 pair
Option D:	3 pair
2.	Which OSI layer allows the transmission and reception of data segments to a session layer in addition to the provision of flow control, sequence numbering and message acknowledgment?
Option A:	Network Layer
Option B:	Session Layer
Option C:	Transport Layer
Option D:	Application Layer
3.	A Link Control Protocol (LCP) is used for …….
Option A:	Establishing, configuring and testing the data-link connection
Option B:	Establishing and configuring different network-layer protocols
Option C:	Testing the different network-layer protocols
Option D:	Provides for multiplexing of different network-layer protocols
4.	Which transport layer protocol is used by DHCP?
Option A:	RSVP
Option B:	TCP
Option C:	DCCP
Option D:	UDP
5.	TCP groups a number of bytes together into a packet called ……
Option A:	Packet
Option B:	Buffer
Option C:	Segment
Option D:	Stack
6.	When 2 or more bits in a data unit has been changed during the transmission, the error is called……
Option A:	random error
Option B:	burst error
Option C:	inverted error
Option D:	double error
7.	The computation of the shortest path in OSPF is usually done by……
Option A:	Bellman-ford algorithm

Option B:	Routing information protocol
Option C:	Dijkstra's algorithm
Option D:	Distance vector routing
8.	Connection establishment in TCP is done by which mechanism?
Option A:	Flow control
Option B:	Three-Way Handshaking
Option C:	Forwarding
Option D:	Synchronization
9.	In IPv4 header format, the header size is?
Option A:	20 to 60 bytes
Option B:	20 bytes
Option C:	60 bytes
Option D:	Depends on the MTU
10.	If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?
Option A:	255.255.255.252
Option B:	255.255.255.255
Option C:	255.255.255.240
Option D:	255.255.255.248
11.	Which transmission media are widely used in the backbone of networks?
Option A:	Unshielded Twisted Pair (UTP)
Option B:	Shielded Twisted Pair (STP)
Option C:	Optical Fiber
Option D:	Wireless
12.	In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be……
Option A:	1
Option B:	16
Option C:	15
Option D:	31
13.	Protocols in which the desire to transmit is broadcast before the actual transmission are called as
Option A:	Reservation Protocol
Option B:	Aloha Protocol
Option C:	Bit Map protocol
Option D:	TCP Protocol
14.	Find the class of address 14.23.120.8.
Option A:	Class B
Option B:	Class C
Option C:	Class A
Option D:	Class D
15.	HTTP is _____ protocol.
Option A:	Application Layer

Option B:	Transport Layer
Option C:	Network Layer
Option D:	Data Link Layer
16.	_____ allows you to connect and login to a remote computer
Option A:	TELNET
Option B:	FTP
Option C:	HTTP
Option D:	SMTP
17.	Bytes of data being transferred in each connection are numbered by TCP. These numbers start with a ……
Option A:	Fixed number
Option B:	Zero
Option C:	One
Option D:	Randomly generated number
18.	Which of the following control fields in TCP header is used to specify whether the sender has no more data to transmit?
Option A:	FIN
Option B:	RST
Option C:	SYN
Option D:	PSH
19.	In which technique station transmits with a probability of 1 when it finds the channel idle.
Option A:	1 persistent
Option B:	P persistent
Option C:	Non persistent
Option D:	K persistent
20.	Which of the following routing algorithms cannot be used for network layer design?
Option A:	Shortest path algorithm
Option B:	Distance vector routing
Option C:	Link state routing
Option D:	Error-correction protocol
21.	TCP packet is encapsulated in a……
Option A:	UDP Datagram
Option B:	IP Datagram
Option C:	TCP Segment
Option D:	Frame
22.	Encryption and Decryption are the functions of the following layer of OSI mode
Option A:	Transport
Option B:	Session
Option C:	Data link layer
Option D:	Presentation
23.	Header size of the ICMP message is _____

Option A:	8-bytes
Option B:	8-bits
Option C:	16-bytes
Option D:	16-bits
24.	Which of the following file transfer protocols use TCP and establishes two virtual circuits between the local and remote server?
Option A:	FTP
Option B:	TFTP
Option C:	TELNET
Option D:	NFS
25.	Typically the TCP port used by SMTP is _____
Option A:	25
Option B:	35
Option C:	50
Option D:	15
26.	By using which of the following gives us constant time delay?
Option A:	FDM Technique
Option B:	WDM Technique
Option C:	Synchronous TDM Technique
Option D:	CDM Technique
27.	Frame relay has error detection at the _____
Option A:	physical layer
Option B:	data link layer
Option C:	network layer
Option D:	Transport layer
28.	The number of layers in ISO OSI reference model is _____
Option A:	5
Option B:	7
Option C:	6
Option D:	10
29.	In Byte stuffing a special byte is added to the data section of frame when there is a character with the same pattern as the
Option A:	Flag
Option B:	Error
Option C:	Sender
Option D:	Destination
30.	In HDLC protocol , the frames sent by the secondary station are called
Option A:	commands
Option B:	responses
Option C:	data
Option D:	inputs
31.	Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?
Option A:	CDMA
Option B:	CSMA/CA
Option C:	ALOHA
Option D:	CSMA/CD

32.	What are the common protocols associated with the network layer?
Option A:	Address Resolution Protocol
Option B:	Reverse Address Resolution Protocol
Option C:	Internet protocol
Option D:	Neighbour Discovery Protocol
33.	Connection establishment in TCP is done by which mechanism?
Option A:	Flow control
Option B:	Three-Way Handshaking
Option C:	Forwarding
Option D:	Synchronization
34.	Following is not the function of the MAC sublayer :
Option A:	Control of access to media
Option B:	Unique addressing to the stations directly connected to LAN
Option C:	Error Detection
Option D:	Flow control operation
35.	Which of this is not a guided media?
Option A:	Fiber optical cable
Option B:	Coaxial cable
Option C:	Wireless LAN
Option D:	Copper wire
36.	The TCP segment begins with a _____fixed format header.
Option A:	16 byte
Option B:	20 byte
Option C:	32 byte
Option D:	64 byte
37.	TCP process may not write and read data at the same speed, So we need _____ for storage.
Option A:	Packets
Option B:	Buffers
Option C:	Segments
Option D:	Stacks
38.	Which of the following tasks is not done by data link layer?
Option A:	Framing
Option B:	Error Control
Option C:	Flow Control
Option D:	Channel Coding
39.	The frame type that refers to High-level Data Link Control error detection field is
Option A:	Frame check sequence field
Option B:	Control field
Option C:	flag field
Option D:	Information field
40.	_____ work at the network layer of the OSI model.
Option A:	Bridges
Option B:	Hubs
Option C:	Routers

Option D:	Gateways

Questions	
A	**5 marks each**
1	Explain the persistent strategies of CSMA.
2	What is data transparency? How it can be overcome using bit stuffing.
3	An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. i) Find the subnet mask. ii) Find the number of addresses in each subnet. iii) Find the first and last address in subnet 1. iv) Find the first and last addresses in subnet 32.
4	Explain Connection establishment in TCP using three way handshaking.
5	a) The following is a dump of a TCP header in hexadecimal format : 05320017 00000001 00000000 500207FF 00000000 i) What is the source port number? ii) What is the destination port number? iii) What is the length of the header? iv) What is the type of segment? What is the window size?
6	Compare between distance vector routing and link state routing.
7	Compare between Packet switching and Circuit Switching.
8	Explain the fields related to fragmentation in IP datagram.
9	Which is better, ADSL or Cable? Justify your answer.
10	Explain the features of TCP.
11	Draw the IPV4 header.
12	Explain Selective repeat ARQ protocol.
13	Differentiate between Bus Topology and Ring Topology.
14	Explain the functions of Data Link Layer.
15	Write a short note on slotted ALOHA.
16	Compare Twisted pair cable, Coaxial cable and Fiber optical cable.
17	Write a short note on Bit Stuffing framing method.
18	Explain the TCP/IP model.
19	Explain Stop and Wait protocol for error free channel.
20	The following is a dump of a UDP header in hexadecimal format. **CB84000D001C001C** a. What is the source port number? b. What is the destination port number? c. What is the total length of the user datagram? d. What is the length of the data? Is the packet directed from a client to a server or vice versa?
21	Write a short note on Adaptive tree walk Protocol
22	Write a short note on CSMA/CD.
23	A group of N stations share 100 Kbps slotted ALOHA channel. Each station output a 500 bits frame on an average of 5000 ms even if previous one has not been sent. What is the required value of N?.
B	**10 marks each**

24	An ISP is granted a block of addresses starting with 150.80.0.0/16. The ISP wants to distribute these blocks to 2400 customers as follows: i) the first group has 400 small businesses: each needs approximately 16 addresses ii) the second group has 2000 households: each needs 4 addresses Design the sub blocks and give the slash notation for each sub block. Find out how many addresses are still available after these allocations
25	Explain DHCP on the same and the different networks
26	Explain the various types of frames in HDLC.
27	Explain the OSI-RM model and functions of each layer.
28	Explain Go-Back-N ARQ and Selective Repeat ARQ.
29	Explain the different error reporting messages in ICMP with message format.
30	Explain in detail the physical media used for computer communication.
31	Explain Congestion control in TCP.
32	Explain TELNET and SSH
33	Explain in brief DSL and HFC.
34	Explain the Transition States of TCP with neat diagram.
35	Draw IPv4 Header, and explain the meaning of various fields associated with it.
36	What are the Hardware network devices? Explain any four in details.
37	Explain Distance Vector Routing Algorithm.
38	Explain the classful addresses of IPV4 with net-id and host-id
39	Explain the concept of sending an E-mail using an appropriate application layer protocol.
40	Explain the transition states of DHCP with a neat diagram.

Question Number	**Correct Option (Enter either 'A' or 'B' or 'C' or 'D')**
Q1.	B
Q2.	C
Q3.	A
Q4	D
Q5	C
Q6	B
Q7	C
Q8.	B
Q9.	A
Q10.	C
Q11.	C
Q12.	A
Q13.	A
Q14.	C
Q15.	A
Q16.	A
Q17.	D

Q18.	A
Q19.	A
Q20.	D
Q21.	B
Q22.	D
Q23.	A
Q24.	A
Q25.	A
Q26.	C
Q27.	A
Q28.	B
Q29.	A
Q30.	B
Q31.	B
Q32.	C
Q33.	B
Q34.	B
Q35.	C
Q36.	B
Q37.	B
Q38.	C
Q39.	A
Q40.	A