

Sample Questions

Department of Information Technology

Subject Name: Computer Network and Network Design

Course Code: ITC402

Semester: IV

Multiple Choice Questions

	Choose the correct option for following questions. All the Questions carry equal marks
1.	RPC stands for
Option A:	Rear Procedure Call
Option B:	Remote Parser Call
Option C:	Remote Passing Call
Option D:	Remote Procedure Call
2.	IPv6 allows _____ security provisions than IPv4.
Option A:	More
Option B:	Less
Option C:	Same
Option D:	None of the above
3.	The IPv4 header field formerly known as the service type field is now called the _____ field.
Option A:	IETF
Option B:	Differentiated Services
Option C:	Checksum
Option D:	Type of Service
4.	BGP protocol uses which of the following algorithm,
Option A:	Distance Vector
Option B:	Path Vector
Option C:	Link-State Routing
Option D:	IGMP
5.	TCP/IP model was developed _____ the OSI model.
Option A:	Prior to
Option B:	After
Option C:	No reference
Option D:	Simultaneous to
6.	Which layer provides the services to user?
Option A:	Application layer
Option B:	Physical layer

Option C:	Transport Layer
Option D:	Network Layer
Option A:	11001001000
Option B:	11001001011
Option C:	11001010
Option D:	110010010011
8.	In polling method, in the poll function, when response is positive then the primary station reads the data and returns an
Option A:	waiting frame
Option B:	Sending frame
Option C:	Receiving frame
Option D:	Acknowledgment frame
9.	Which medium / cable consists of inner copper core and a second conducting outer sheath
Option A:	Fiber optic
Option B:	Unshielded Twisted pair
Option C:	Coaxial cable
Option D:	Shielded Twisted pair
10.	If the resultant value of checksum is 0, what does it indicate?
Option A:	Message accepted
Option B:	Message rejected
Option C:	Message resent
Option D:	Message send back
11.	In the slow start phase of the TCP congestion control algorithm, the size of the congestion window
Option A:	Does not increase
Option B:	Increases linearly
Option C:	Increases quadratically
Option D:	Increases exponentially
12.	The ports ranging from 0 to 1,023 are called the _____ ports. The ports ranging from 1,024 to 49,151 are called _____ ports. The ports ranging from 49,152 to 65,535 are called the _____ ports.
Option A:	well-known; registered; dynamic or private
Option B:	registered; dynamic or private; well-known
Option C:	private or dynamic; well-known; registered
Option D:	private or dynamic; registered; well-known
13.	TCP is a _____ protocol.
Option A:	bit-oriented

Option B:	message-oriented
Option C:	block-oriented
Option D:	byte-oriented
14.	In TCP, the window should not be _____.
Option A:	opened
Option B:	closed
Option C:	shrunk
Option D:	slide
15.	The first section of a URL identifier is the _____.
Option A:	protocol
Option B:	path
Option C:	host
16.	Which of the following compression method is not lossless?
Option A:	run-length coding
Option B:	dictionary coding
Option C:	arithmetic coding
Option D:	predictive coding
17.	In FTP, there are three types of _____: stream, block, and compressed.
Option A:	file types
Option B:	data types
Option C:	Data structures
Option D:	transmission modes
18.	Which layer 1 device can be used to enlarge the area covered by a single LAN segment? <ul style="list-style-type: none"> . Switch . NIC . Hub . Repeater
Option A:	Switch Only
Option B:	Switch and NIC
Option C:	Switch and Hub
Option D:	Switch and Repeater
19.	In a block, the prefix length is /15; what is the mask?
Option A:	255.254.0.0
Option B:	255.255.255.0
Option C:	255.255.255.128
Option D:	255.255.254.128
20.	An organization is granted a block of classless addresses with the starting address 199.34.76.128/29. How many addresses are granted?
Option A:	4

Option B:	8
Option C:	16
Option D:	32
21	OSI stands for
Option A:	Open system interconnection
Option B:	Operating system interface
Option C:	Optical service implementation
Option D:	Open service internet
22.	Which topology is most fastest topology?
Option A:	Star
Option B:	Hybrid
Option C:	Mesh
Option D:	Bus
23.	Which medium has the highest transmission speed?
Option A:	Coaxial Cable
Option B:	Optical fiber cable
Option C:	Twisted pair cable
Option D:	Electrical cable
24.	A bit-stuffing based framing protocol uses an 8-bit delimiter pattern of 01111110. If the output bit-string after stuffing is 011111000100, then the input bit-string is
Option A:	Output = 01111100100
Option B:	Output = 011111100100
Option C:	Output = 011111001100
Option D:	Output = 011111111
25.	In CSMA/CD, the frame transmission time (T_t) should be _____ the propogation time(T_p)
Option A:	$T_t > T_p$
Option B:	$T_t \geq 2T_p$
Option C:	$T_t > 2T_p$
Option D:	$T_t > 1/T_p$
26.	What is the total vulnerable time value of pure Aloha?
Option A:	$1/2 T_{fr}$
Option B:	T_{fr}
Option C:	$2 * T_{fr}$
Option D:	$4 * T_{fr}$
27.	A subset of a network that includes all the routers but contains no loops is called _____
Option A:	spanning tree
Option B:	cost tree
Option C:	path tree

Option D:	special tree
28.	In IPv6, the _____ field in the base header restricts the lifetime of a datagram.
Option A:	version
Option B:	next-header
Option C:	hop limit
Option D:	neighbour-advertisement
29.	The term _____ means that IP provides no error checking or tracking. IP assumes the unreliability of the underlying layers and does its best to get a transmission through to its destination, but with no guarantees.
Option A:	Reliable delivery
Option B:	Connection oriented delivery
Option C:	Best effort delivery
Option D:	Worst delivery
30.	OSPF protocol uses which algorithm?
Option A:	Distance Vector
Option B:	Path Vector
Option C:	Link State Routing
Option D:	RIP
31.	Which of the following transport layer protocols is used to support electronic mail?
Option A:	SMTP
Option B:	IP
Option C:	TCP
Option D:	UDP
32.	In TCP, one end can stop sending data while still receiving data. This is called a _____ termination.
Option A:	half-close
Option B:	half-open
Option C:	full-close
Option D:	Full open
33.	Which of the following functionalities must be implemented by a transport protocol over and above the network protocol?
Option A:	Recovery from packet losses
Option B:	Detection of duplicate packets
Option C:	Packet delivery in the correct order
Option D:	End to end connectivity
34.	In TCP, if the ACK value is 200, then byte _____ has been received successfully.
Option A:	199

Option B:	200
Option C:	201
Option D:	202
35.	The second phase of JPEG compression process is _____.
Option A:	DCT transformation
Option B:	Quantization
Option C:	lossless compression encoding
Option D:	None of the choices are correct.
36.	During an FTP session the data connection may be opened _____.
Option A:	only once
Option B:	only two times
Option C:	Five times
Option D:	as many times as needed
37.	The protocol data unit (PDU) for the application layer in the Internet stack is _____.
Option A:	segment.
Option B:	datagram.
Option C:	message.
Option D:	frame.
38.	A table of a router normally contains addresses belonging to _____ protocol.
Option A:	a single
Option B:	Two
Option C:	Three
Option D:	multiple
39.	The first address assigned to an organization in classless addressing _____.
Option A:	must be a power of 2
Option B:	must be a power of 4
Option C:	must belong to one of the A, B, or C classes
Option D:	must be evenly divisible by the number of addresses
40.	An organization is granted a block of classless addresses with the starting address 199.34.32.0/27. How many addresses are granted?
Option A:	4
Option B:	8
Option C:	16
Option D:	32
41.	Which of the following layers is an addition to OSI model when compared with TCP IP model?
Option A:	Application layer
Option B:	Presentation layer
Option C:	Session layer

Option D:	Session and Presentation layer
42.	How many layers are present in the Internet protocol stack (TCP/IP model)?
Option A:	5
Option B:	7
Option C:	6
Option D:	10
43.	The Media Access Control sublayer deals with which of the following function?
Option A:	Error Control
Option B:	Framing
Option C:	Access Control
Option D:	Flow Control
44.	In which method, a station that wishes to send a frame over a shared channel will sense the channel. If the channel is idle it sends immediately. If the channel is not idle, it waits a random amount of time and then senses the line again.
Option A:	Non- persistent
Option B:	1-persistent
Option C:	p-persistent
Option D:	r-persistent
45.	If the code value in the control field of a S-Frame in HDLC is "10", which type of frame does this code indicate
Option A:	Receive Ready
Option B:	Receive Not Ready
Option C:	Selective-Reject
Option D:	Reject
46.	What does the physical layer define?
Option A:	Data Rate
Option B:	Logical addressing
Option C:	Compression algorithm
Option D:	Encryption method
47.	Which one of the following is not a function of network layer?
Option A:	Routing
Option B:	inter-networking
Option C:	congestion control
Option D:	error control
48.	Which one of the following algorithm is not used for congestion control?
Option A:	Nagle Algorithm
Option B:	load shedding
Option C:	Choke packet

Option D:	routing information protocol
49.	The main function of ICMP is
Option A:	Error and diagnostic functions
Option B:	Routing
Option C:	Forwarding
Option D:	Addressing
50.	Which field restricts the lifetime of a datagram in IPv6 header
Option A:	Version
Option B:	Next-header
Option C:	Hop-limit
Option D:	Neighbor advertisement
51.	TCP groups a number of bytes together into a packet called a _____.
Option A:	user datagram
Option B:	segment
Option C:	datagram
Option D:	message
52.	The inclusion of the checksum in the TCP segment is _____.
Option A:	optional
Option B:	mandatory
Option C:	depends on the type of data
Option D:	Depends on the type of application program
53.	The source port number on the UDP user datagram header defines _____.
Option A:	the sending computer
Option B:	the receiving computer
Option C:	the process running on the sending computer
Option D:	the process running on the receiving computer
54.	In TCP, a SYN segment consumes _____ sequence number(s).
Option A:	no
Option B:	one
Option C:	two
Option D:	three
55.	Lempel Ziv Welch (LZW) method is an example of _____.
Option A:	run-length coding
Option B:	dictionary coding
Option C:	arithmetic coding
Option D:	predictive coding
56.	In the DNS, the names are defined in _____ structure.
Option A:	a linear list
Option B:	an inverted-tree
Option C:	a three-dimensional

Option D:	a nonlinear list
57.	FTP uses the services of _____.
Option A:	UDP
Option B:	TCP
Option C:	IP
Option D:	ICMP
58.	What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/10?
Option A:	12.0.0.0
Option B:	12.2.0.0
Option C:	12.2.2.2
Option D:	12.2.2.8
59.	The topology that requires multipoint connection is _____.
Option A:	Star
Option B:	Mesh
Option C:	Ring
Option D:	bus
60.	In fixed-length subnetting, the number of subnets must _____.
Option A:	be a power of 2
Option B:	be a multiple of 128
Option C:	be divisible by 128
Option D:	be a multiple of 256

Descriptive Questions

10 marks each				
1. Explain HDLC protocol in detail				
2. Compare Bus and Star topology				
3. Explain IP v4 Header with a neat labelled diagram				
4. Write note on TCP timers.				
5. Explain SNMP protocol.				
6. An organization is granted the block of 16.0.0.0/8. The administrator wants to create 500 fixed length subnets. Find (a) subnet mask (b) number of addresses in each subnet (c) first and last addresses in subnet 1.				
7. Explain the OSI Model in brief with suitable figure				
8. What is a sliding window? Explain Go back N protocol in detail				
9. What do you mean by switching? What are the types of switching techniques				
10. What is congestion and what are causes of congestion?				
11. Compare TCP and UDP.				
12. Consider five source symbols of a discrete memory less source. Their probabilities are given below. Find the Huffman code for each symbol.				
Symbol	M1	M2	M3	M4

probability	0.4	0.3	0.2	0.1	
13. Explain ALOHA and Slotted ALOHA.					
14. Compare LAN, WAN, MAN					
15. Explain IP v4 Header format					
16. Compare connectionless and connection-oriented services.					
17. What is Domain Name System? How does it work?					
18. An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 subblocks of addresses to use in its three subnets: one subblock of 10 addresses, one subblock of 60 addresses and one subblock of 120 addresses. Design the subblocks.					
Compare connectionless and connection-oriented services.					