

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Term Semester Examination, July 2020**

**Program: B. Tech. CSE + BFSI&ECRA**

**Semester: IV**

**Course: Data Communication and Computer Networks**

**Time 02 hrs. (2 PM-4 PM)**

**Course Code: CSEG2009**

**Total Question: 60**

**Max. Marks: 100**

S.No.	Type	Question	First Option	Second Option	Third Option	Fourth Option
1	MC	Which layer devices can be used to enlarge the area covered by a single LAN segment? 1. Switch 2. NIC 3. Hub 4. Repeater	1 only	1 and 3	3 and 4	5 only
2	MC	Routers operate at layer _____. LAN switches operate at layer _____. Ethernet hubs operate at layer _____. Word processing operates at layer _____.	3, 3, 1, 7	3, 2, 1, none	3, 2, 1, 7	3, 3, 2, none
3	MC	Which of the following describe router functions?	Packet switching	Packet filtering	Internetwork communication	All of the above
4	MC	A receiving host has failed to receive all of the segments that it should acknowledge. What can the host do to improve the reliability of this communication session?	Send a different source port number.	Restart the virtual circuit.	Decrease the sequence number.	Decrease the window size.
5	MC	What are the decimal and hexadecimal equivalents for the binary number 10110111?	69/0x2102	183/7B	173/A6	83/0xC5
6	MC	What is the purpose of flow control?	To ensure that data is retransmitted if acknowledgment is not received.	To reassemble segments in the correct order at the destination device.	To provide a means for the receiver to govern the amount of data sent by the sender.	To regulate the size of each segment.
7	MC	Which of the following statement (s) is/are TRUE?	In Circuit-switching, the bandwidth utilization is best.	In Packet-switching, the different packets may travel along different routes.	In Virtual-circuit-switching, packets may travel along different routes.	There is a delay in communication during circuit-switching
8	MC	A complete topology is the one in which every node is connected to every other node. If such a topology has 27 nodes in total, and length of one connecting segment is 5 meters, the total length of the wires required will be _____meters.	1050	1155	2100	2310
9	MC	Let G(x) be the generator polynomial used for CRC checking. What is the condition that should be satisfied by G(x) to detect odd number of bits in error?	(A) G(x) contains more than two terms	(B) G(x) does not divide 1+x^k, for any k not exceeding the frame length	(C) 1+x is a factor of G(x)	(D) G(x) has an odd number of terms.
10	MC	In binary exponential back off algorithm the back off time is calculated by choosing a multiplier in the range 2k-1, where k (no. of unsuccessful attempts) AND multiplying it with maximum propagation time and average time to send out a frame. Specify if the statement is true or if false select the correct option	Statement is true	Statement is false as k is not the no. of unsuccessful attempts.	Statement is false. Multiplier is multiplied only by propagation time	Statement is false. Multiplier is multiplied either by propagation time or average time to send out a frame.
11	MC	Which of the following are true in case of Ethernet LAN? 1. In a CSMA/CD collision domain, multiple stations can successfully transmit data simultaneously without any collision. 2. In a CSMA/CD collision domain, stations must wait until the media is not in use before transmitting. 3. You can improve the CSMA/CD network by adding more hubs. 4. After a collision, the station that detected the collision has first priority to resend the lost data. 5. After a collision, all stations run a random backoff algorithm. When the backoff delay period has expired, all stations have equal priority to transmit data.	1 and 3	2 and 4	1,3 and 4	2 and 5
12	MC	The address of a class B host is to be split into subnets with a 6-bit subnet number. What is the maximum number of subnets and the maximum number of hosts in each subnet?	62 subnets and 262142 hosts.	64 subnets and 262142 hosts.	62 subnets and 1022 hosts.	64 subnets and 1024 hosts.
13	MC	Suppose to transmit a bit stream 10011101 CRC is used and the generator polynomial used is x+1. The actual bit transmitted is:	10011101000	10011101100	10011101111	1011101101
14	MC	A binary value 10101111 is encoded using Hamming codes considering even parity. What is the transmitted codeword?	101001001111	111001001111	110010011111	101001011111
15	MC	Bandwidth in Networks means	Connected Computers in the Network	Class of IP used in Network	Transmission capacity of a communication channels	None of these
16	MC	Match the List (P) SMTP (1) Application layer (Q) BGP (2) Transport layer (R) TCP (3) Data Link layer (S) PPP (4) Network Layer	P - 2 Q - 1 R - 3 S - 5	P - 1 Q - 4 R - 2 S - 3	P - 1 Q - 4 R - 2 S - 5	P - 2 Q - 4 R - 1 S - 3
17	MC	An organization has a class B network and wishes to form subnets for 64 departments. The subnet mask would be:	255.255.0.0	255.255.64.0	255.255.128.0	255.255.252.0
18	MC	Determine the maximum length of the cable (in km) for transmitting data at a rate of 250 Mbps in an Ethernet LAN with frames of size 10,000 bits. Assume the signal speed in the cable to be 2,00,000 km/s.	1	4	2.5	5
19	MC	In one of the pairs of protocols given below, both the protocols use TWO TCP connections between the same client and the server. Which one is that?	HTTP, TELNET,POP	HTTP, FTP	FTP, SMTP	HTTP, SMTP
20	MC	Host A sends a UDP datagram containing 4440 bytes of user data to host B over an Ethernet LAN. Ethernet frames may carry data up to 1500 bytes (i.e. MTU = 1500 bytes). Size of UDP header is 6 bytes and size of IP header is 20 bytes. There is no option field in IP header. How many total number of IP fragments will be transmitted and what will be the contents of offset field in the last fragment?	3 and 1480	3 and 7400	7 and 1110	7 and 8880

21	MC	Out of the following which is the correct order of increasing noise immunity in guided transmission media?	Copper Wire, Fibre Optical Cable, Twisted Pair Wire, Coaxial Cable	Incorrect	Fibre Optical Cable, Coaxial Cable, Twisted Pair Wire, Copper Wire	Incorrect	Copper Wire, Twisted Pair Wire, Coaxial Cable, Fibre Optical Cable	Correct	None	Incorrect
22	MC	How the efficiency of slotted ALOHA is doubled that of pure ALOHA?	The entire channel is divided into sub-channels thus less collisions occur	Incorrect	Various users are allowed to transmit at distinct quantum of time	Incorrect	Time is divided into slots and a station is allowed to transmit only at the beginning of a time slot	Correct	None of these	Incorrect
23	MC	What is the Network address for a host with the IP address 200.10.5.68?	200.10.5.0	Incorrect	200.10.0.0	Incorrect	200.0.0.0	Correct	200.255.255.255	Incorrect
24	MC	Suppose that a message 1001 1100 1010 0011 is transmitted using Internet Checksum (4-bit word). What is the value of the checksum?	1111	Incorrect	1101	Incorrect	1100	Correct	None of these	Incorrect
25	MC	The Domain Name System (DNS) network service uses which transport layer protocol?	IP	Incorrect	UDP	Correct	TCP	Incorrect	HTTP	Incorrect
26	MC	Which is a valid IP address?	191.1.257.2	Incorrect	129.42.67.1	Correct	0.1.2	Incorrect	A9:97:6D:4F:H6	Incorrect
27	MC	Which octet of the subnet mask 255.255.255.0 will tell the router the corresponding host ID?	First	Incorrect	Second	Correct	Third	Incorrect	Last	Correct
28	MC	If a TCP socket is ready and listening for incoming connections, it's in the _____ state	Established	Incorrect	Close_wait	Incorrect	Syn_Sent	Incorrect	Listen	Correct
29	MC	A Transmission Control Protocol (TCP) connection is in working order and both sides can send each other data. What is the TCP socket state?	SYN_RECEIVED	Incorrect	SYN_SENT	Incorrect	ESTABLISHED	Correct	LISTEN	Incorrect
30	MC	A communication between two devices is over the maximum limit of an ethernet frame size. The Transmission Control Protocol (TCP) splits up the data into segments. Which field in the header helps keep track of the many segments?	Checksum	Incorrect	Sequence number	Correct	Urgent pointer	Incorrect	Acknowledgement number	Incorrect
31	MC	What is the maximum chunk of the data that can be sent in a single frame of IEEE802.3?	5100 bytes	Incorrect	1500 bytes	Correct	1450 bytes	Incorrect	500 bytes	Incorrect
32	MC	ICMP is the protocol that is used to send echo requests and replies. At which layer of OSI, it works	Transport	Incorrect	Physical	Incorrect	Network	Correct	Datalink	Incorrect
33	MC	Count to infinity problem is associated with which of the following routing algorithms:	Distance vector	Correct	Link State	Incorrect	Flooding	Incorrect	Heirarchical	Incorrect

34	MC	If you use either Telnet or FTP, which is the highest layer you are talking about?	Session	Incorrect	Presentation	Incorrect	Application	Correct	Network	Incorrect
35	MC	Which of the following TWO algorithms, one is more rigid OR less flexible	Leaky Bucket	Correct	Token Bucket	Incorrect	Network Bucket	Incorrect	Packet Bucket	Incorrect
36	MC	Which of the following category of satellites, is at the highest level from earth ?	LEO	Incorrect	MEO	Incorrect	GEO	Correct	PEO	Incorrect
37	MC	Which of the following is NOT a congestion prevention policy at Transport layer?	Retransmission Policy	Incorrect	Out-of-Order cache Policy	Incorrect	Packet Discard Policy	Correct	Acknowledgement Policy	Incorrect
38	MC	The ability for a protocol or program to determine that something went wrong during the transmission and the data is NOT received as was sent, is known as.	Redundency	Incorrect	Error detection	Correct	Data Verification	Incorrect	Data Resilience	Incorrect
39	MC	An organization responsible for assigning individual domain names to other organizations or individuals is known as a(n).	Internet authority	Incorrect	DNS Registrar	Correct	Autonomous system	Incorrect	Government	Incorrect
40	MC	For all IPv6 addresses, the network ID is always the first _____ bits.	16	Incorrect	32	Incorrect	64	Correct	128	Incorrect
41	MC	As an IT decision maker, you plan to satisfy business needs by using software as a service. Which option do you deploy?	Windows server 2019	Incorrect	Virtual Firewall	Incorrect	Office365	Correct	Linux workstation	Incorrect
42	MC	Which of the following is NOT a metrics used for closed loop congestion control policy?	Average Queue Length	Incorrect	Average Packet Delay	Incorrect	%age of packets those timed-out	Incorrect	Packet-length	Correct
43	MC	Which Internet Protocol (IP) v6 field is identical in purpose to the TTL field in an IPv4 header?	Flow label	Incorrect	Hop Limit	Correct	Next header	Incorrect	Traffic Class	Incorrect
44	MC	The sub-network address if the destination address is 19.30.84.15 and the mask is 255.255.192.0	19.30.64.0	Correct	19.30.84.0	Incorrect	19.0.0.0	Incorrect	None	Incorrect
45	MC	During connection establishment, when sending TCP sends SYN=0, SeqNo=20, which of the following is the response of other side in affirmative	SYN=0, ACK=20, SeqNo=21	Incorrect	SYN=1, ACK=20, SeqNo=21	Incorrect	SYN=1, ACK=20, SeqNo=21	Incorrect	SYN=1, ACK=21, SeqNo=35	Correct
46	MC	The solution of Silly Window Syndrome created by sender side is given by	Nagle's Algorithm	Correct	Clark's Algorithm	Incorrect	Delayed Acknowledgement	Incorrect	Nile's Algorithm	Incorrect
47	MC	A device that knows how to forward traffic between independent networks is known as a _____.	Router	Correct	Switches	Incorrect	Hub	Incorrect	Repeater	Incorrect
48	MC	The technique that allows you to have multiple logical LANs operating on the same physical equipment is known as a _____.	Collision Domain	Incorrect	Datalink Layer	Incorrect	VLAN	Correct	Protocol	Incorrect
49	MC	The first field of an Ethernet frame is known as the	Frame check sequence	Incorrect	Data packet	Incorrect	MAC Address	Incorrect	Preamble	Correct
50	MC	Which of the following statements are true regarding the command <code>ip route 172.16.4.0 255.255.255.0 192.168.4.2?</code> 1. The command is used to establish a static route. 2. The default administrative distance is used. 3. The command is used to configure the default route. 4. The subnet mask for the source address is 255.255.255.0.	1 and 2	Correct	2 and 3	Incorrect	3 and 4	Incorrect	All of the mentioned	Incorrect
51	MC	Which of the following statement is NOT true with respect to TCP congestion control?	The bytes that may be sent are minimum of WIN and Cong_WIN values	Incorrect	TCP maintains two windows: WIN and Cong_WIN	Incorrect	Cong_WIN is initialized at the beginning equal to the max segment size in use	Incorrect	All are True	Correct
52	MC	If when Threshold = 32, Cong_WIN = 48, time out occurs during transmission, what will be the new values of Threshold and Cong_WIN respectively? The max segment size agreed upon was 4	24 and 4	Correct	16 and 4	Incorrect	4 and 4	Incorrect	24 and 16	Incorrect
53	MC	Which one of the following is not an application layer protocol?	Media Gateway Protocol	Incorrect	Dynamic Host Configuration Protocol	Incorrect	Resource Reservation Protocol	Correct	Session Initiation Protocol	Incorrect
54	MC	In TCP window management (flow control) when sender is blocked by receiving side, which of the following it can still send?	Urgent Data	Incorrect	Probe Segment	Incorrect	Both	Correct	None	Incorrect
55	MC	To map a name onto an IP address, an application program calls a library procedure called	Listen	Incorrect	Accept	Incorrect	Resolver	Correct	None of the above	Incorrect
56	MC	The language in which the objects in SNMP are defined is named as	Management Information Base	Incorrect	SMTP	Incorrect	Abstract Syntax Notation	Correct	BGP	Incorrect
57	MC	MIB stands for	Management Information Base	Correct	Management Internet Base	Incorrect	Medium Inter Block	Incorrect	Massive Internet Base	Incorrect
58	MC	In the network HTTP resources are located by	Uniform Resource Identifier	Correct	Unique Resource Locator	Incorrect	Unique Resource Identifier	Incorrect	Union Resource Locator	Incorrect
59	MC	HTTP client requests by establishing a _____ connection to a particular port on the server.	User Datagram Protocol	Incorrect	Transmission Control Protocol	Correct	Border Gateway Protocol	Incorrect	Domain Host Control Protocol	Incorrect

60	MC	_____ is the multiplexing technique that shifts each signal to a different carrier frequency.	FDM	Correct	TDM	Incorrect	FDM and TDM	Incorrect	PDM	Incorrect
----	----	---	-----	---------	-----	-----------	-------------	-----------	-----	-----------