Sub Code/Name : 18CSS202J- Computer Communications

Year / Sem / Dept : II Year / IV / B. Tech – CSE (ALL streams)

CLA2 QUESTION BANK

PART-A (1 MARK EACH)

ANSWER ALL THE QUESTIONS

Q. No.	Questions
1.	The size of IP address in IPv4 is a) 2 bytes b) 32 bits c) 8bytes d) 100bits
2.	In IPv4 Addresses, classful addressing is replaced with a) Classless Addressing b) Classful Addressing c) Classful Advertising d) Classless Advertising
3.	In classful addressing, a large part of available addresses is_____ a) Organized b) Blocked c) Wasted d) Communicated
4.	Which of this is not a class of IP address? a) Class E b) Class C c) Class D d) Class F
5	Network addresses are very important concepts of a) Routing b) Mask c) IP Address d) Classless Address
6	Name the concept used to divide a large IP network in smaller IP networks a) Supernetting b) Subnetting c) Classful address d) Classless address
7	Select the operating layer of a hub a) Physical layer b) Datalink layer c) Network layer d) Transport layer
8	A device that connects networks with different protocols _____ a) Switch b) Hub c) Gateway d) repeater
9	A device which is used to boost the signal between two cable segments is a) Switch b) Hub c) Gateway d) repeater
10	Networking device connect one LAN to other LAN using same protocol is a) Switch b) Hub c) Gateway d) Repeater
11	Multiplexing technique that shifts each signal to a different carrier frequency a) FDM b) TDM c) WDM d) OFDM
12	The conversion in Delta modulation is _____ a) Analog to digital b) Digital to analog c) ADC and DAC d) Analog to Discrete
13	If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of TDM is _____ a) 32kbps b) 50bps c) 60kbps d) 80 kbps
14	A complex low-pass signal has a bandwidth of 200 kHz, the minimum sampling rate for this signal is a) 100 kHz b) 200kHz c) 300kHz d) 400kHz
15	A signal is carrying data in which one data element is encoded as one signal element (r = 1). If the bit rate is 100 kbps, what is the average value of the baud rate if c is between 0 and 1? a) 50 k baud b) 100 k baud c) 150 k baud d) 200 k baud
16	An analog signal carries 4 bits per signal element. If 1000 signal elements aresent per second, find the bit rate? a) 4kbps b) 4Gbps c) 4Tbps d) 4Mkbps

17	Coaxial cable consists of_____concentric copper conductors. a) 1 b) 2 c) 3 d) 4
18	Terrestrial radio channels are broadly classified into_____groups. a) 1 b) 2 c) 3 d) 4
19	In TDM, the transmission rate of the multiplexed path is usually_____thesum of the transmission rates of the signal sources. a) Greater than b) Lesser than c) Equal to d) infinity
20	Identify the unguided media in the given options. a) Fiber optical cable b) Coaxial cable c) Microwaves d) Copper wire
21	The maximum number of IP addresses that can be assigned to hosts on a local subnet that uses 255.255.255.224 subnet mask is a) 14 b) 15 c) 16 d) 30
22	The network address of 172.16.0.0/19 provides subnets and hosts. a) 7 subnets, 1,230 hosts each b) 8 subnets, 8,190 hosts each c) 8 subnets, 2,046 hosts each d) 7 subnets, 2,046 hosts each
23	The size of IP address in IPv4 is a) 4bytes b) 128bits c) 32 bits d) 100bits
24	A is a device that forwards packets between networks by processing the routing information included in the packet. a) bridge b) firewall c) router d) hub
25	A repeater is a device that operates only in the a) LAN b) WAN c) MAN d) connector
26	_is the broadcast address for a Class B network ID using default subnet mask. a) 172.16.10.255 b) 255.255.255.255 c) 172.16.255.255 d)172.255.255.255
27	An IP address of 172.16.13.5 with a 255.255.255.128 subnet mask has subnet address, and broadcast address. a) 172.16.13.0, 172.16.13.127 b) 172.16.13.0, 172.16.13.127 c) 172.16.13.0, 172.16.13.255 d) 172.16.0.0, 172.16.255.255
28	The combination of and is often termed the local address of the local portion of the IP address. a) Network and host number b) Network and subnet number c) Subnet and host number d) Host number and super net number
29	Identify the class of the IP address 172.16.2.1 a) Class A b) Class B c) Class C d) Class E
30	Change the binary address to dotted decimal notation 10000001 00001011 00001011 11101111 a)129.11.11.239 b)128.11.11.239 c)128.11.11.236 d)129.11.11.238
31	multiplexing technique transmits digital signals. ____ a) FDM b) TDM c) WDM d) FDM & WDM
32	If a link transmits 4000frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is a) 32kbps b) 500bps c) 500kbps d) 1500kbps
33	TDM, slots are further divided into _____ a) Seconds b) Frames c) Packets d) segment
34	Polar coding is a technique in which_ a) 1 is transmitted by a positive pulse and 0 is transmitted by negative pulse b) 1 is transmitted by a positive pulse and 0 is transmitted by zero volts c) 1 is transmitted by +V and 0 is transmitted by -V

	1 is transmitted by -V and 0 is transmitted by+V
35	The signal rate is also called as_ a) Baud b)bit c)signal d)byte
36	In a____scheme, all the signal levels are on one sideof the time axis, eitherabove or below a)unipolar b)Polar c)bipolar d)Nonpolar
37	The idea of RZ and the idea of NRZ-L are combined into the____. a)Manchester b)differential Manchester c) synchronisation d)Integration
38	The minimum bandwidth of Manchester and differential Manchester is____ that of NRZ a)twice b)the same as c)thrice d) Half
39	PCM is an example of ____ a)digital to digital b)analog to digital c)analog to analog d)digital to analog
40	In asynchronous transmission , the gap between bytes is _____ a)fixed b)variable c)zero d)function of data rate
41	In classless addressing, there are no classes but addresses are still granted in a) IPs b) Blocks c) Codes d) Sizes
42	The combination of _____ and _____ is often termed the local address of the local portion of the IP address. a) Network number and host number b) Network number and subnet number c) Subnet number and host number d) Host number
43	In classful addressing, a large part of available addresses are a) Organized b) Blocked c) Wasted d) Communicated
44	Which of this is not a class of IP address? a) Class E b) Class C c) Class D d) Class F
45	Multiplexing technique that shifts each signal to a different carrier frequency a) FDM b) TDM c) Both FDM & TDM d) CDM

PART B (4MARKS)

Q. No.		Questions
1	1	Explain the concept of dotted decimal notation in addressing.
2	2	Draw the diagram of a three-layer device and explain it
3		A block of IP addresses is granted to ECE department of SRM university. One of the IP addresses in the block is 205.16.32.36/29. Find the first address, lastaddress and number of addresses in the block?

4	With the help of a diagram explain the concept of a Bipolar line codingtechnique.
5	An analog signal has a bit rate of 4000 bps and band rate of 500 baud. How many data elements are carried by each signal element? How many signal elements do we need?
6	Illustrate the concept of WDM with the help of a diagram.
7	Determine the error in the following IPv4 addresses. (i)103.57.040.71, (ii)220.130.9.3.2, (iii)65.33.399.10, (iv)11100011.14.14.63
8	Draw and explain internal structure of Router.
9	Write the differences between Unicast addressing mode and Broad cast addressing mode in IPV4.
10	Illustrate Amplitude Shift Keying.
11	Explain Time Division Multiplexing with neat diagram.
12	A signal constitutes of 1000 Hz, 1800 Hz, and 2000 Hz frequencies. Determine the minimum sample rate required to find this information?
13	Mention the special classes and summarize the block of IP addresses allocated for local area networking for each class.
14	An analog signal has a bit rate of 4000bps and baud rate of 500 baud. How many data elements can be carried by the signal element? How many signal elements do we need?
15	You have an available bandwidth of 100KHz which spans from 200 to 300KHz.What are the carrier frequency and bit rate if ASK with d=1 is used for modulation?

PART C (12 MARKS)

1	Explain the network address translation with neat diagram
2	Determine the number of subnets and hosts per subnet possible for thenetwork 192.168.1.0/27? List their subnet's Network ID, Host ID and Broadcast ID.
3	Illustrate Line coding with its types with neat diagram
4	Explain Pulse code modulation and delta modulation.
5	An organization is grant4ted with IP address 192.16.2.0/24. The administrationwants to create 4 subnets. Calculate the following 1) Find the subnet mask 2) Number of hosts in each subnet 3) First & Last host address of each subnet 4) Network & Broadcast address of each subnet
6	With the help of a neat sketch explain the following network devices Hub b) Repeaters c) Switch.
7	Discuss in detail about the following digital modulation technique with thehelp a neat sketch a) ASK b) PCM.
8	List the different types of guided media used in communication channel and explain them in detail.
9	Mention the NRZ-L and NRZ-I using the data stream 00000000,assuming that last signal level has been positive,
10	Compare and Contrast TDM, FDM and WDM