Register Number															

SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu

Academic Year: 2021-22 (Even)

Set - B

Test: CLA-T2 | Date: 30-05-2022
Course Code & Title: 18CSS202J - Computer Communications | Duration: 100 Minutes (2 Periods)
Year & Sem: II Year / IV Sem | Max. Marks: 50

Course Articulation Matrix:

S.No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	CO1	3	-	-	-	-	-	-	-	-	-	-	3
2	CO2	3	2	3	-	-	-	-	-	-	-	-	3
3	CO3	3	3	3	-	-	-	-	-	-	-	-	3
4	CO4	3	2	-	-	-	-	-	-	-	-	-	3
5	CO5	3	-	-	-	-	-	-	-	-	-	-	2
6	CO6	3	3	3	-	-	-	-	-	-	-	-	3

Part - A
(20 x 1 = 20 Marks)

Instructions: 1) Answer ALL questions. 2) The duration for answering the part A is 30 minutes (this sheet will be collected after 30 minutes). 3) Encircle the correct answer 4) * denotes more than one choice may be correct

Q. No	Question	Marks	BL	CO	PO	PI Code
1	In IPV4 address, Class B uses _____ bits for net ID and _____ bits for host ID a) 8, 24 b) 16, 16 c) 15, 17 d) 24, 8	1	1	3	1	1.7.1
2	How many possible networks are there in a class C of an IPv4 address? a) 16384 b) 128 c) 256 d) 2097152	1	1	3	2	2.6.3
3	Choose the dotted-decimal notation of the IPv4 address 01100011 01111101 10101100 11010010 a) 100.126.173.211 b) 98.124.171.209 c) 99.125.172.210 d) 99.124.172.209	1	2	3	2	2.6.3
4	Choose the class of the given IPV4 address 248.48.24.155 a) B b) A c) E d) D	1	1	3	1	1.7.1
5	What is the first address in the block of one of the addresses 168.122.98.123/26 a) 168.122.98.127 b) 168.122.98.0 c) 168.122.98.1 d) 168.122.98.64	1	2	3	2	2.6.3
6	Assume that an organization is assigned with Class C network ID. The organization wants to have 12 subnets. Which subnet mask it will use. a) 255.255.255.252 b) 255.255.255.240 c) 255.255.255.192 d) 255.255.255.248	1	2	3	2	2.6.3

7	Dividing a large address block into smaller sub-groups is _____. a) Supermasking b) Submasking c) Supernetting d) Subnetting	1	2	3	1	1.7.1
8	Repeater operates at layer (s) ____of the OSI model. a) Physical Layer b) Data link Layer c) Network Layer d) Presentation Layer	1	2	3	1	1.7.1
9 *	Choose the correct statement(s) about router. a) It transfers the data in the form of packets b) It sends data based on the MAC address of a device. c) It uses a routing table to send the data d) It has only one port to connect the device.	1	1	3	1	1.7.1
10	Number of addresses in a block must be a power of 2 is one of the restrictions in _____. a) Classless Addressing b) Classful Addressing c) Private Address d) Public Address	1	2	3	1	1.7.1
11	Pulse Code Modulation is the process of converting _____. a) digital data to digital signals b) analog data to digital signals c) digital data to analog signals d) analog signal to digital data	1	1	4	1	1.7.1
12	A receiver will evaluate the average power of the received signal called _____ and use that to determine the value of the incoming data elements. a) DC components b) Synchronization c) Baseline d) Noise	1	1	4	1	1.7.1
13	The unit for signal rate is _____. a) bps b) baud c) immune d) Coulomb	1	1	4	1	1.7.1
14	In Frequency Shift Keying, the _____ and _____ remain constant for all signal elements. a) peak amplitude, phase b) frequency, phase c) voltage, frequency d) signal element, data element	1	2	4	1	1.7.1
15	Calculate the value of the signal rate for the case “One data element per two signal elements” if the data rate is 1 Mbps and c = 1/2. a) 500 Kbaud b) 1 Mbaud c) 250 Kbaud d) 375 Kbaud	1	3	4	2	2.6.3
16	The _____ separates a signal into its component signals ie. one input and n outputs. a) Mux b) Demux c) Encoder d) Decoder	1	1	4	1	1.7.1
17	_____ uses a carrier signal at a discrete frequency for each data stream and then combines many modulated signals. a) TDM b) SDM c) CDMA d) FDM	1	1	4	1	1.7.1
18	Multiplexing is used in? a) Packet switching b) Circuit switching c) Data switching d) Packet & Data switching	1	2	4	1	1.7.1
19	The Polar Non-Return to Zero scheme uses _____ voltage values. a) 1 b) 2 c) 3 d) 4	1	1	4	1	1.7.1
20	What is Synchronous TDM? a) gives same amount of time to each device b) gives same amount of frequency to each device c) gives variable time to each device d) gives variable frequency to each device	1	3	4	1	1.7.1

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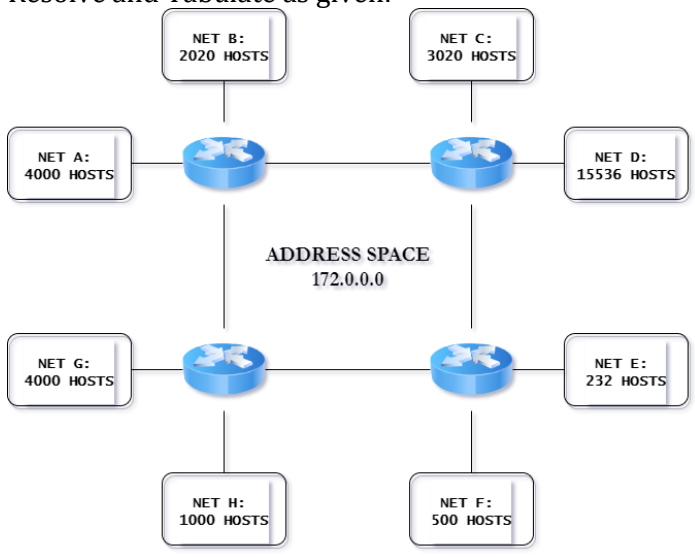
Part – B
(2 x 5 = 10 Marks)
Instructions: Answer ALL questions

Q. No	Question	Marks	BL	CO	PO	PI Code
21	i. Identify the network Id for the IP address 122.10.45.200/20 ii. If 64 subnets are needed for 172.16.0.0 address space, what subnet mask must be assigned? iii. To have a real point to point network without a network and broadcast address, how many network bits are required in an IP address? iv. At least, how many network bits are used when the IP addresses 192.168.10.127 and 192.168.10.128 belong to different subnets? v. What is the wildcard mask for 255.255.128.0	5	3	3	2	2.6.3
22	Distinguish between a signal element and a data element	5	2	4	1	1.7.1

Part – C
(2 x 10 = 20 Marks)
Instructions: Answer ANY two questions

Q. No	Question	Marks	BL	CO	PO	PI Code
23. A	Resolve and Tabulate as given: 	10	3	3	2	2.6.3

	Network	Hosts	Net ID in CIDR notation	Subnet Mask	Number of Hosts in Subnet	Broadcast Address					
	NET A										
	NET B										
	NET C										
	NET D										
	NET E										
	NET F										
	NET G										
	NET H										
	Or										
23. B	An organization is granted a block of 192.168.10.0. The administrator wants to create 11 subnets as shown below. 1. 2 subnets with 64 addresses 2. 2 subnets with 32 addresses 3. 3 subnets with 16 addresses 4. 4 subnets with 4 addresses Find the subnet mask, usable address range, network address, and broadcast address for each subnet. (7) If no subnetting is done and when Class C address is used for each network for the above demands, tabulate how many address spaces are wasted for each network. (3)						10	3	3	2	2.6.3
24. A	Explain Pulse Code Modulation in detail with diagram.						10	2	4	1	1.7.1
	Or										
24. B	Describe the working of Frequency division multiplexing with relevant diagram. Also write its merits, demerits and applications.						10	2	4	1	1.7.1

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions