Reg. No.															

B.Tech. DEGREE EXAMINATION, JANUARY 2024

Fourth Semester

18CSS202J – COMPUTER COMMUNICATIONS

(For the candidates admitted during the academic year 2020-2021 to 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. A software engineer wants to develop security algorithm using encryption. Which OSI layer protocols will help him to develop the security algorithm? (A) Application layer (B) Presentation layer (C) Transport layer (D) Network layer	1	2	2	1
2. There are five devices connected using mesh topology and simplex transmission. How many cables are needed? How many ports are needed for each devices? (A) 20 cables, 8 ports (B) 20 cables, 10 ports (C) 10 cables, 4 ports (D) 10 cables, 10 ports	1	2	1	1,2
3. The _____ layer is not part of the TCP/IP model but present in the OSI model. (A) Network layer (B) Transport layer (C) Application layer (D) Session layer	1	1	1	1
4. The sequence value which is used to check the integrity of data is appended in _____ layer. (A) MAC layer (B) Physical layer (C) Transport layer (D) Presentation layer	1	1	1	1
5. In IPV_4 address class A uses _____ bits for net ID and _____ bits for host ID. (A) 8, 24 (B) 16, 16 (C) 15, 17 (D) 24, 8	1	2	2	1
6. Assume an IP address 168.199.170.82/26. How many addresses will be there in the network? (A) 32 (B) 64 (C) 26 (D) 82	1	2	2	1,2
7. A router receives a packet with the destination address 132.7.21.84. Find the network address of the packet. (A) 1.32.7 (B) 132.7 (C) 13.27 (D) 21.84	1	2	2	1,2

8. A _____ is a device in which the stations are completely unaware of its existence. 1 1 2 1

(A) Passive hub (B) Repeater
(C) Simple bridge (D) Transparent bridge

9. In _____ line encoding scheme, the 'I' symbol alternates between +V and –V. 1 2 3 1

(A) Unipolar RZ (B) Bipolar AMI
(C) Bipolar pseudo ternary (D) Manchester coding

10. In digital to analog conversion, when two carriers are used, with the help of constellation diagram we can define _____ of a signal. 1 1 3 1

(A) Time (B) Frequency
(C) Frequency and time (D) Amplitude and phase

11. The _____ is designed for digital signals. 1 2 3 1

(A) Frequency – division multiplexing (B) Wavelength-division multiplexing
(C) Time-division multiplexing (D) Space-division multiplexing

12. When pulse code modulation is used to convert analog signal to digital data, the sequence of operation is 1 1 3 1

(A) Quantizing, sampling, encoding (B) Sampling, encoding, quantizing
(C) Sampling, quantizing, sampling (D) Encoding, quantizing, sampling

13. The stop-and-wait flow control method is the same as the sliding window method with a window size of _____. 1 2 4 1

(A) 0 (B) 1
(C) 2 (D) 3

14. In the sliding window method of flow control, the sender may send _____ at a time. 1 2 4 1

(A) Several frames (B) Only one frame
(C) Two frames (D) One or two frames

15. In cyclic redundancy checking what is the CRC? 1 1 4 1

(A) The quotient (B) The dividend
(C) The divisor (D) The remainder

16. Carrier Sense Multiple Access (CSMA) is based on the medium called 1 1 4 1

(A) Listen before talk (B) Listen before sending
(C) Sense before transmit (D) Sense before collision

17. In _____ forwarding, the mask and destination addresses are both 0.0.0.0 in the routing table 1 1 5 1.2

(A) Default (B) Host – specific
(C) Next – hop (D) Network – specific

18.	Routing between autonomous systems is referred to as _____. (A) Internet domain routers (B) Interdomain routing (C) Intradomain routing (D) Worldwide routing	1	2	6	1
19.	How often does a RIP V_1 router broadcast its routing table by default? (A) Every 30 seconds (B) Every 60 seconds (C) Every 90 seconds (D) $RIPV_1$ does not broadcast periodically	1	2	5	1
20.	What is the purpose of the keepalive message? (A) To request an update message (B) To acknowledge a notification message (C) To begin the peer relationship (D) To maintain the BGP peer session	1	2	5	1

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Write about five components of computer communications.	4	1	1	1
22.	Write short notes on parallel transmission.	4	1	2	1
23.	What is NAT? Write in brief about it.	4	1	3	1
24.	List the address range of private IPs.	4	1	3	1
25.	What is frequency division multiplexing? Give an example.	4	1	4	1
26.	Demonstrate checksum with suitable example.	4	1	5	1
27.	Compare static and dynamic routing.	4	1	5	1

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.i.	Name the four basic network topologies and cite an advantage of each type.	6	2	2	1,2
ii.	Draw the layers in the OSI model and write the functions of each layer.	6	1	1	1
	(OR)				
b.i.	Draw the architecture of TCP/IP protocol suite and discuss its functions.	6	2	1	1
ii.	Explain the four levels of address used in an internet employing the TCP/IP protocols.	6	3	1	1
29. a.i.	Subnet the class C IP address 195.1.1.0 so that you have atleast 2 subnets each subnet must have room for 48 hosts. What are the two possible subnet masks?	6	3	3	1,2

	ii. You are given the following address 172.16.4.255/255.255.255.252.0. Find the network, directed broadcast and usable host range.	6	3	3	1,2
	(OR)				
	b.i. Appraise the special addressing in detail with suitable example.	6	4	3	1,2
	ii. Explain in detail about the working of router.	6	3	3	1
30.	a.i. List down the line coding schemes. Explain any two in detail with example.	6	3	4	1
	ii. Explain the working principle of delta modulation with neat sketch.	6	3	4	1
	(OR)				
	b.i. What is multiplexing? List its categories. Explain any one in detail.	6	3	5	1
	ii. Write in detail about wireless transmission waves.	6	3	5	1
31.	a. Analyze the stop and wait and sliding window technique with suitable examples.	12	4	4	1
	(OR)				
	b. Write in detail about High-level Data Link Control (HDLC) and point-to-point protocol (PPP).	12	3	4	1
32.	a. Explain in detail about distance vector routing with suitable example.	12	3	6	1
	(OR)				
	b. Demonstrate the Open Shortest Path First (OSPF) protocol with example.	12	3	6	1

* * * * *