ii.	How is routing loop prevented in RIP and BGP?	5	2	3	7

(OR)

b.i.	What is subnetting? If the host IP address is 135.54.65.42 and subnet mask is 255.255.240.0, find the first and last address of this subnet.	5	3	3	3
ii.	Draw the IPv6 datagram format. Also list the drawback of IPv4.	5	2	3	7
29. a.i.	From the UDP header content sequence CB84000D00ICFFFF, find: (1) Source and destination port numbers (2) Length of data and total length of UDP datagram	5	4	4	7
ii.	Differentiate the closed loop congestion control techniques.	5	4	4	7

(OR)

b.i.	Draw the TCP segment format with appropriate field markings. How is transmission window size is adjusted in connection with congestion control?	5	2	4	7
ii.	Draw and explain the leaky bucket implementation with FIFO queuing.	5	2	4	7
30. a.i.	Classify compression techniques and give examples. Also write short note on JPEG compression process.	5	2	5	5
ii.	List various network management functions and briefly explain the concept of SNMP.	5	2	5	12

(OR)

b.i.	List the SIP messages and illustrate their purpose with a sample session.	5	2	5	5
ii.	Draw an email handing scenario to show the email agents and protocols involved and briefly mention their scope.	5	2	5	12

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Reg. No.														

B.Tech. DEGREE EXAMINATION, NOVEMBER 2022
Sixth Semester

18ECC303J – COMPUTER COMMUNICATION NETWORKS
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

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** should be answered in answer booklet.

Time: 2½ Hours Max. Marks: 75

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
1.	_____ is the maximum number of symbols that can be represented by Unicode. (A) 2^{16} (B) 2^{32} (C) 2^{64} (D) 2^{128}	1	1	1	7
2.	Name of the data packet in data link layer is _____ (A) Datagram (B) Segment (C) Frame (D) Format	1	1	1	7
3.	_____ topology uses multipoint connection. (A) Bus (B) Star (C) Ring (D) Mesh	1	2	1	12
4.	In a six node topology, how many ports are needed for each device? (A) 1 (B) 5 (C) 6 (D) 15	1	2	1	7
5.	10 base 5 ethernet LAN has a maximum segment length of _____ meters. (A) 5 (B) 10 (C) 50 (D) 500	1	2	1	12
6.	How many errors can be corrected by a scheme with $d_{min} = 4$? (A) 1 (B) 2 (C) 3 (D) 4	1	3	2	3
7.	How many bytes of padding must be added in Ethernet data link layer when it receives a 42 byte datagram? (A) 4 (B) 6 (C) 22 (D) 58	1	2	2	3
8.	Calculate the checksum for the data sequence 1000 1010 0100 0011 (A) 0011 (B) 1010 (C) 0101 (D) 1100	1	2	2	3

9. _____ is not a random access mechanism. 1 1 2 7
(A) CDMA (B) CSMA/CD
(C) CSMA/CA (D) Slotted Aloha

10. _____ is IEEE standard for token bus. 1 1 2 7
(A) 802.3 (B) 802.4
(C) 802.5 (D) 802.11

11. _____ is a loop address. 1 1 3 7
(A) 0.0.0.0 (B) 127.0.0.0
(C) 172.16.0.0 (D) 255.255.0.0

12. Which of the following is not a BGP message? 1 1 6 7
(A) Hello (B) Update
(C) Keep alive (D) Notification

13. Identify the private address 1 2 3 6
(A) 100.0.0.0 (B) 172.0.0.0
(C) 192.168.0.0 (D) 255.255.255.255

14. When you create 1024 subnets in a block 130.56.0.0/16, how many addresses will be there in each subnet? 1 3 3 3
(A) 2^{16} (B) 2^{10}
(C) 2^{6} (D) 2^{4}

15. Which of the following is not supportive protocol in network layer? 1 1 3 7
(A) ARP (B) RSVP
(C) RARP (D) ICMP

16. What is the size of TCP sending window in 'shunt down' state? 1 2 4 7
(A) 0 (B) 1
(C) Half of previous window size (D) No change in window size

17. If the TCP flag field value is 000010, then it is _____ segment. 1 1 4 7
(A) ACK (B) FIN
(C) EYN (D) RST

18. Which of the following protocol does not use UDP? 1 2 4 7
(A) RIP (B) FTP
(C) SNMP (D) RTP

19. What is the maximum number of data types that can be encapsulated in a UDP datagram? 1 2 4 7
(A) 16,384 (B) 16,376
(C) 65,535 (D) 65,527

20. Which of the following congestion control techniques uses a separate notification packet? 1 1 4 7
(A) Implicit signaling (B) Explicit signaling
(C) Back pressure (D) Choke packet

21. _____ is SIP message for session termination. 1 1 5 3
(A) Cancel (B) Notify
(C) Bye (D) Finish

22. _____ application uses peer-to-peer paradigm. 1 1 5 3
(A) FTP (B) Email
(C) IP telephony (D) WWW

23. Find the plain text (P) of given ciphertext C=13 using decryption key d =7. (Assume that prime numbers used are 3 and 11) 1 2 5 3
(A) 1 (B) 3
(C) 7 (D) 11

24. Which of the following is present in both HTTP request line and status line? 1 1 5 3
(A) Version (B) URL
(C) Status code (D) Method

25. Identify the protocol used in pulling email message from server by client 1 1 5 3
(A) Simple mail transfer protocol (B) Post office protocol
(C) File transfer protocol (D) Simple network management protocol

PART – B (5 × 10 = 50 Marks) Marks BL CO PO
Answer **ALL** Questions

26. a.i. Tabulate the layers of OSI reference model and mention their functions. 5 2 1 12

ii. State the merits and demerits of datagram type of packet switching. 5 2 1 7

(OR)

b.i. What are synchronous and asynchronous data transfer modes? List their pros and cons. 5 2 1 7

ii. Classify network topologies and highlight their applications. 5 2 1 12

27. a.i. Analyze the error detecting capabilities of cyclic code using polynomials. 5 4 2 3

ii. Draw and interpret the format of HDLC control field. 5 2 2 3

(OR)

b.i. Justify the maximum limit on sending window size setting of selective repeat protocol with relevant diagrams. 5 4 2 3

ii. Show how a medium access control is done in token ring using suitable sketches. 5 2 2 3

28. a.i. Given the IP address 218.76.134.68 find the default mask, network address and range of block. Also, mention the advantages of classless addressing. 5 3 3 3