b.	Justify with code snippets, how UDP and TCP/IP socket communication differs, also explain how to track a IP packet in windows / Linux.	10	5	2	2
28. a.i.	Consider a scenario where Client machine was active monitoring program which request standard graphics primitives that are executed on the remote workstation. As a programmer you want to hide the communication details with your entity to others. How you can achieve this?	5	6	3	2
ii.	Assume Alice and Bob wants to communicate with each other. The client side alice creates a TCP connection with Bob, server. Both client and server was different types of transaction for longer time. Narrate on how this type of communication can be achieved successfully?	5	6	3	2
	(OR)				
b.	Examine the procedure to integrate DHCP and DNS?				
(i)	Analyse the limitation of Bootstrap protocol which lead to the development of Dynamic Host configuration protocol (DHC).	5	6	3	2
(ii)	Discuss the need for inverse domain in DNS.	5	4	3	2
29. a.	Network operator in a country planned to operate a high speed, low cost national wide optical – fiber communication network to the medical field, so that remote consultation between physicians using multimedia based audio, video and image like patient records shared remotely.	6+4	5	5	2
i.	For the above scenario explain which network and protocol can be deployed				
ii.	Identify the features of that network				
	(OR)				
b.	Two machines which are connected point to point in network need reliable delivery of data frames and data is broken up into chunks so that data error can be detected and corrected easily, the network should provide data flow control	6+4	5	6	3
i.	Analyze the type of data transfer mode in the network.				
ii.	Demonstrate the data frame structure and its frame types of the networks				
30. a.	Show the IPV6 abbreviated address notations given below:	2+2+2 +2+2	5	4	2
i.	0000 : 2213 : FFFF : 0000 : 0000 : 0000 : 0000 : 0000				
ii.	4322 : 3424 : 0000 : 0000 : 0000 : 0000 : 0000 : 1111				
iii.	0000 : 0001 : 0000 : 0000 : 0000 : 0000 : 2000 : 2002				
iv.	0000 : 0000 : 0000 : 0000 : 0000 : FFEE : 42 . 123				
v.	LOOP back address (0 : 0 : 0 : 0 : 0 : 0 : 0 : 1)				
	(OR)				
b.	Find an unabbreviated IPV6 address from the following	2+2+2	5	4	2
i.	BCBC : B : BC : : 4567				
ii.	For the above value find the binary equivalent				
iii.	Find decimal notation for above value				
iv.	Identify leading 0 suppression notation for above value				
v.	Identify zero compressed notation				

* * * * *

Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2022

Fifth Semester

18CSC302J – COMPUTER 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.	The internet address can also be represented as (A) ARP Address (B) RARP Address (C) Physical Address (D) Logical Address	1	1	1	1
2.	_____ informs the sender node that a packet or datagram is lost or discarded due to congestion at router (A) Echo request (B) Echo reply (C) Source Quench (D) Destination Quench	1		1	1
3.	Source Node S wants to send a message to destination Node D. In the routing path , if the source node S wants to redirect the packets, so it is _____ (A) Creates a reply packet (B) Sends the reply packet (C) Modifies the routing table (D) Reassemble the reply packet	1	1	1	1
4.	In an IP datagram the frames are embedded with_____. (A) Header only (B) Trailer only (C) Header and Trailer (D) Header or Trailer	1	2	1	1
5.	"PING" is an application that uses (A) echo_request / echo_reply ICMP message (B) Redirection ICMP message (C) timestamp_request / timestamp_ reply ICMP message (D) time_exceed ICMP message	1	1	1	1
6.	Total length field in UDP packet header is the length of _____ (A) UDP header (B) UDP trailer (C) UDP header, trailer and data (D) UDP header plus data	1	1	2	1
7.	A client company is placed in Pune and the server company is placed in Chennai. Pune client wanted to access the subroutine call from Chennai company. It can be achieved using _____. (A) TCP/IP (B) UDP (C) SCTP (D) RPC	1	1	2	1
8.	The _____ is used for communication between _____ on different systems. (A) TCP, two processes (B) UDP, two processes (C) RPC two processes (D) SCTP, two processes	1	2	2	1

9. Identify from below which statement is true? 1 2 2 1

(A) SCTP is a new message oriented transport layer protocol
(B) SCTP is a new message oriented connection less protocol
(C) SCTP is a new message oriented network layer protocol
(D) SCTP is a stream oriented protocol from network layer

10. _____ and _____ techniques are used by SCTP to prevent blind flooding attacks and avoid insertion attacks 1 2 2 2

(A) Socket and Descriptor table
(B) Cookie and Descriptor table
(C) Cookie and Verification Tag
(D) Socket and Verification Tag

11. Match the following 1 1 3 2

a. Dynamic Document message – (i) Proxy Server
b. Mail Server by WAN or LAN – (ii) WWW
c. Network Information System – (iii) JSP
d. Gateway between Client and Server – (iv) Access Agents

(A) a – (i), b – (ii), c – (iii), d – (iv)
(B) a – (ii), b – (i), c – (iv), d – (iii)
(C) a - (iii), b – (ii), c- (iv), d – (i)
(D) a – (iii), b – (iv), c – (ii), d – (i)

12. FTP and HTTP uses _____ data format for encoding 1 2 3 1

(A) UDP Protocol
(B) DHCP Protocol
(C) TCP Protocol
(D) ICMP Protocol

13. The domain name space (tree) for internet is divided into _____ different sections 1 2 3 2

(A) Two
(B) One
(C) Three
(D) Four

14. _____ is a server whose zone consists of the whole tree 1 1 3 1

(A) Client Server
(B) Root Server
(C) Stream Server
(D) UDP Server

15. Match the following 1 1 3 2

a. IMAP – i) Port 25
b. DNS – ii) Port 110
c. FTP – iii) Port 53
d. POP3 – iv) Email Protocol
– v) Port - 21

(A) a – v), b – ii), c – i), d – iii)
(B) a – ii), b – i), c – iii), d – v)
(C) a – iv), b – iii), c – v), d – ii)
(D) a – iii), b – ii), c – iv), d – i)

16. In IPV6 addressing colon hexadecimal notation _____ numbers of hexadecimal digits are used to represent addresses 1 3 4 1

(A) 128
(B) 32
(C) 64
(D) 140

17. A vendor wants to apply the replacement for IPV6, so they can use _____ and _____ instead of higher version IP 1 3 4 1

(A) Public address space and protected address space
(B) Private address space and protected address space
(C) Private address space and network address translation
(D) Private address and network address space

18. _____ feature is not in IPV6 and in IPV4 1 3 4 1

(A) Zero suppression
(B) Protocol Extension
(C) Any cast address
(D) Support for resource allocation

19. Ronald wants to establish a home network connection. But he want to build the network without NAT, will it be a secure connection? 1 3 4 1

(A) No, Ronald can't able to establish a home network connection without NAT
(B) Yes, translating addresses does not provide any security benefits
(C) May be
(D) Sometimes secure and sometimes may not secure

20. In a hop – by – hop extension header, the code value 00000001 represents 1 3 4 1

(A) Optional Value
(B) Pad N
(C) Zero
(D) Unicast Address

21. Match the following 1 1 5 2

i) PPP – a) Byte oriented protocol
ii) HDLC – b) Bit oriented protocol
iii) Service of class C – c) Type ¾
iv) Service of class D – d) Type 5

(A) i) – b), ii) – a) ; iii) – c) ; iv) – d
(B) i) – b) ; ii) – a); iii) – d), iv) – c)
(C) i) – c, ii) – d); iii) – a), iv) – b
(D) i) – a), ii) – b), iii) – c), iv) – d)

22. In ATM, the two and points are connected through an interface are called ____ 1 1 5 2

(A) Network
(B) User
(C) User Network
(D) Agent Network

23. AAL ¾ supports both _____ and _____ data 1 1 5 2

(A) Convergence, connection oriented
(B) Connection oriented, connection less
(C) PPP and HDLC
(D) IPV6 and IPV4

24. _____ is the variant of ADLS which supports upstream distance of 4000 feet 1 1 6 2

(A) ADSL – 1000
(B) ADSL – 4000
(C) VDSL
(D) ADSL - 2000

25. FRAD is used to establish the connection between _____ and _____. 1 1 6 2

(A) WAN and LAN
(B) MAN and WAN
(C) LAN and Frame Relay WAN
(D) Frame Relay

PART – B (5 × 10 = 50 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
26. a.i.	Compare and contrast static and dynamic mapping in detail.	5	4	1	1
ii.	Compare and contrast the error reporting messages and query messages.	5	4	1	1
	(OR)				
b.i.	Differentiate three way hand shaking and four way handshaking in TCP connection termination.	5	4	1	1
ii.	Specify how IP fragmentation is happening with an example.	5	4	1	1
27. a.	The following is a dump of a SCTP DATA chunk in hexadecimal format	10	5	2	2

00000023 00000003 0002000B 00000000 48656C6C 6F000001

a. How many bytes of padding are carried by the chunk?
b. Is this the first, the last, the middle or the only fragment?
c. What is the SI?
d. What is the TSN?
e. What is the SSN?

(OR)