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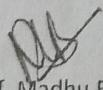
Sub.Code:  
18CS54

**Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BANGALORE – 560056**  
 (An Autonomous Institution Affiliated to Visvesvaraya Technological University, Belgaum)  
 Department of Computer Science&Engg.

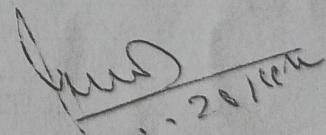
Outer Ring Road, Mallathahalli, Bangalore -560 056

Date: 26-11-2021	Sub Title: Computer Networks and Internet Protocols	Timings: 9.30-10.30
Day: Friday	Sub code: 18CS54	Time duration: 50 minutes
Branch: CSE		Max Marks: 20
Semester/Sec: 5 A , B, C& D	CIE- 1	Staff in Charge : Prof. Madhu B, Prof. Uma K M, Prof. Shanmuga Priya

Question Number	Description	Marks	Course outcome	Btl* cognitive level
1 (a)	Explain the fundamental characteristics and components of a data communication system.	5M	(CO1)	L1,L2
	(b) Illustrate any five functionalities of physical layer in OSI reference model.	5M	(CO1)	L4
2 (a)	Differentiate between Pure ALOHA and Slotted ALOHA	5M	(CO2)	L5,L2
	(b) Define physical topology. Illustrate a star topology with the aid of a neat diagram. <u>OR</u>	5M	(CO1)	L1,L3
	(c) Illustrate framing and explain byte stuffing	5M	(CO2)	L4

  
Prof. Madhu B, Prof. Uma Km, Prof Shanmuga Priya

Priya

  
Approved by

STAFF IN CHARGE

HOD, CSE



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Date: 26-11-2021	Sub Title: Computer Networks and Internet Protocols	Timings: 9.30-10.30
Day: Friday	Sub code: 18CS54	Time duration: 50 minutes
Branch: CSE		Max Marks: 5
Semester/Sec: 5 A , B, C & D	CIE- 1	Staff in Charge : Prof. Madhu B, Prof. Uma K M, Prof. Shanmuga Priya

1. Encryption is the function of _____ layer	A. data link	B. physical	C. transport	D. Presentation
2. Service point addresses are generated by _____.	A. data link	B. physical	C. network	D. transport
3. File transfer protocol is present in _____ layer	A. data link	B. Application	C. network	D. transport
4. Dialog control is the function of _____ layer	A. session	B. physical	C. network	D. transport
5. Translation is the function of _____ layer	A. data link	B. physical	C. transport	D. Presentation
6. _____ layer defines the frames.	A. data link	B. network	C. session	D. physical
7. Logical addressing is the function of _____	A. data link	B. network	C. session	D. transport
8. Keyboard is an example of _____ mode of communication.	A. Full-duplex	B. Half-duplex	C. Simplex	D. None of the above
9. _____ layer provides mechanical, electrical interface.	A. Physical	B. network	C. data link	D. transport
10. The number of nodes in a mesh network is 12, find the number of duplex links required	A. 60	B. 65	C. 66	D. 50

D  
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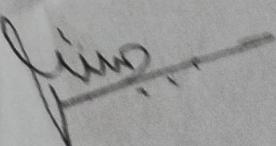
**Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BANGALORE - 560056**  
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 Department of Computer Sciences & Engg.

Outer Ring Road, Malathahalli, Bangalore -560 056

Date:29.12.2021	Sub Title: Computer networks and internet protocols	Timings: 9.30-10.30
Day:Wednesday	Sub code:18CS54	Time duration:50minutes
Branch:CSE		Max Marks:20
Semester/Sec:5 A, B, C,D	CIE- II	Staff in Charge: Dr.Madhu B, Prof.Uma K M, Prof.Shanmuga Priya.

Question Number	Description	Marks	Course outcome	Btl* cognitive level
1 (a)	Compare Bellman Ford and Dijkstra's Algorithm	5M	CO4	L4
(b)	Write an algorithm for Leaky Bucket algorithm.	5M	CO3	L3
2 (a)	Illustrate the delay in Datagram Packet Switching network by considering 2 switches and three packets corresponding to a single message.	5M	CO3	L2
(b)	What is subnet addressing .If an Organization has Class B address with 150.100.12.176.Create subnets with up to 100 hosts Find the subnet mask and subnet address.	5M	CO4	L2
(c)	Write a short note on any 2 of the following IP address Header fields 1)Time to Live 2)Type of Service 3)Header checksum	5M	CO4	L4

  
 Dr. Madhu B., Prof. Uma K M., Prof. Shanmuga Priya  
 STAFF IN CHARGE

  
 HOD,  
 Dept of CSE

USN **1 D A**

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Department of Computer Science & Engg.  
 Outer Ring Road, Mallathahalli, Bangalore -560 056

Date: 29.12.2021	Sub Title: Computer networks and internet protocols	Timings: 9.30-10.30
Day: Wednesday	Sub code: 18CS54	Time duration: 10 minutes
Branch: CSE		Max Marks: 05
Semester/Sec: 5 A , B, C	CIE-II	Staff in Charge : Dr.Madhu B, Prof.Uma K M, Prof.Shanmuga Priya

1. In ----- systems resources are allocated on demand.			
A. Packet Switching	B. Circuit Switching	C. Message Switching	D. Frequency Switching
2. Most packet switches use this principle-----			
A. Stop and wait	B. Store and Forward	C. Store and wait	D. Stop and Forward
3. If a router interface is congested, which protocol in the IP suite is used to inform neighboring routers?			
A. IP	B. ICMP	C. ARP	D.RARP
4. Which protocol works at the transport layer provides connectionless service between hosts?			
A.UDP	B.TCP	C.IP	D.ARP
5. Which protocol is used to find the MAC address of a local device?			
A ICMP	B. IP	C.ARP	D.RARP
6. Which address range can be used in the first octet of a Class B network address?			
A. 1-127	B. 128-190	C. 128-191	D. 192-220
7. Version 6 of IP address has how many bits			
A.128 bits	B. 64 bits	C. 32 Bits	D. 256 bits
8. field in IPV4 specifies the priority of the packet			
A.identification	B.TOS	C.TTL	D.Padding
9. Traffic class of IPV6 contains ----- bits			
A.8 bits	B.4 Bits	C.6 Bits	D.16 Bits
10. The Protocol field value for UDP in IPV4 is			
A.6	B.17	C.10	D.14

FIFTH Semester B.E. Degree Semester End Examination (SEE), FEB/MAR-2022

**COMPUTER NETWORK AND INTERNET PROTOCOLS**

[Time: 3 Hours]

[Maximum Marks: 100]

Instructions to students:

- (i) Answer FIVE FULL Questions as per the choice.
- (ii) Any Missing Data can be assumed suitably.
- (iii) Use BLACK ball point pen for text, figure, table, etc.

		Marks	CO	RBT Level
1.	a) Define data communication. Explain the fundamental characteristics and components of a data communication system.	[08 Marks]	CO1	L2
	b) Distinguish between Local Area Networks , Wide Area Networks and Metropolitan area networks	[06 Marks]	CO1	L3
	c) List the criteria that a network needs to meet. Explain each one in detail.	[06 Marks]	CO1	L1, L2
OR				
2.	a) Describe the functions of OSI layer with a neat diagram.	[10 Marks]	CO1	L2
	b) Discuss TCP/IP protocol suite and its functions with neat diagram.	[10 Marks]	CO1	L2
3.	a) Discuss the concepts of bit stuffing and byte stuffing along with unstuffing.	[08 Marks]	CO2	L2
	b) Differentiate between ALOHA and Slotted ALOHA	[06 Marks]	CO2	L3
	c) Write short notes on i) CSMA /CD ii) CSMA/CA	[06 Marks]	CO2	L2
OR				
4.	a) What is Channelization. Illustrate different protocols of Channelization with relevant diagrams.	[10 Marks]	CO2	L2
	b) Explain stop-and-wait ARQ protocol with its Design and write sender site algorithm.	[10 Marks]	CO2	L2
5.	a) Consider the network in the Fig 5a. Use the Dijkstra's Algorithm to find the set of shortest paths from node 1 to other nodes. Draw the shortest path tree.	[10 Marks]	CO3	L4

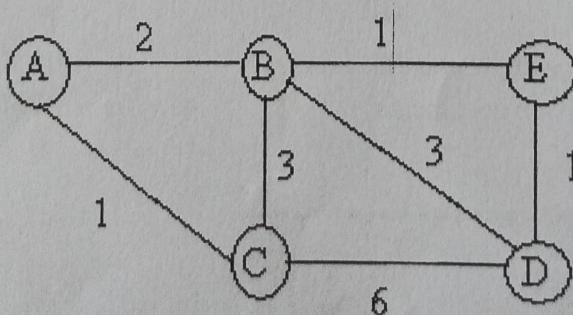
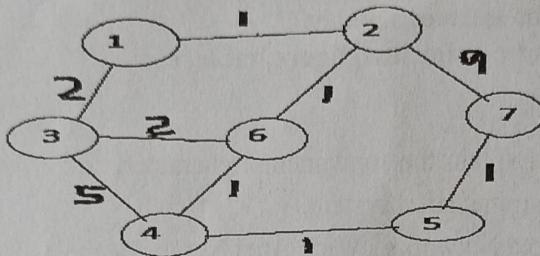


Fig 5a.

- b) Distinguish between datagram and virtual circuits. Explain the routing in virtual circuits. [10 Marks] CO3 L3

**OR**

6. a) Compare Dijkstra's Algorithm and Bellman Ford algorithm. [06 Marks] CO3 L3  
 b) Explain and derive delays in datagram packet switching. [04 Marks] CO3 L2  
 c) Define Bellman Ford Algorithm. Using Bellman Ford Algorithm to find shortest path from all the nodes to node 7 in the network given below. Draw the shortest path tree. [10 Marks] CO3 L4



7. a) Discuss IP address classification and Identify the following IP addresses and their Address class: [06 Marks] CO3 L2  
 i) 200.58.20.165  
 ii) 128.167.23.20  
 iii) 16.196.128.50.  
 b) Interpret tunneling approach of transmission of IPv6 packets over IPv4 tunnel with neat diagram. [04 Marks] CO4 L2  
 c) Illustrate the concept of Fragmentation and Reassembly with the help of suitable diagram. [10 Marks] CO3 L3

**OR**

8. a) Describe the concept of classful addressing in IPv4. Illustrate with example. [10 Marks] CO3 L2  
 b) Discuss IPV6 header format and mention its advantages. [10 Marks] CO3 L2, L1  
 9. a) Illustrate the three way handshake for establishing a TCP connection, with a diagram. [08 Marks] CO4 L2  
 b) Discuss two types of DNS messages with its header format. [06 Marks] CO4 L2  
 c) Paraphrase congestion control in TCP. [06 Marks] CO4 L2

**OR**

10. a) Explain the operation of OSPF with relevant diagram. [10 Marks] CO4 L2  
 b) Discuss different categories of web documents. [10 Marks] CO4 L2

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