Enroll. No._____

MARWADI UNIVERSITY

Faculty of Technology

Information Technology B.Tech

SEM: 4 MU FINAL EXAM/ MU FINAL REMEDIAL May: 2023

Subject: - Computer Network (01IT1401) **Date:-11/05/2023**

Total Marks:-100 **Time: -2:00 PM to 5:00 PM**

Instructions:

1. **All Questions are Compulsory.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Do not write/sign/indication/tick mark anything other than Enroll No. at a specific place on the question paper.**

Question: 1.

(a) Objective MCQ [10]

1) Identify the switching method in which the message is divided into small packets.
   a) Virtual switching
   b) Packet switching
   c) Message switching
   d) None

2) The physical layer is concerned with _____
   a) bit-by-bit delivery
   b) process to process delivery
   c) application to application delivery
   d) port to port delivery

3) Bluetooth is an example of _____
   a) local area network
   b) wide area network
   c) personal area network
   d) virtual private network

4) The network layer is concerned with _____ of data.
   a) bits
   b) frames
   c) bytes
   d) packets

5) Transmission control protocol _____
   a) is a connection-oriented protocol
   b) uses a three-way handshake to establish a connection
   c) receives data from application as a single stream
   d) all of the mentioned

6) An endpoint of an inter-process communication flow across a computer network is called _____
   a) pipe
   b) port
   c) socket
   d) machine

7) A local telephone network is an example of a _____ network.
   a) Circuit switched
   b) Packet switched
   c) Bit switched
   d) Line switched

8) When displaying a web page, the application layer uses the _____
   a) FTP protocol
   b) HTTP protocol
   c) SMTP protocol
   d) TCP protocol

9) The time taken by a packet to travel from client to server and then back to the client is called _____
   a) RTT
   b) STT
   c) PTT
   d) CTT

10) Connection establishment in TCP is done by which mechanism?
   a) Flow control
   b) Forwarding
   c) Three-Way Handshaking
   d) Synchronization

(b) Short Questions [10]

1) The size of an IP address in IPv6 is _____
2) 192.168.10.1 is an IP address of which class?
3) Full form of WWW is_____
4) What does LAN stand for?
5) DHCP uses UDP port _____ for sending data to the server.
6) TCP is a Connection oriented protocol. True or False
7) The inclusion of the checksum in the TCP segment is mandatory. True or False
8) The port number of SMTP is 25. True or False
9) The physical layer is concerned with bit-by-bit delivery. True or False
10) Three or more devices share a link in multipoint connection. True or False

Question: 2.

(a) Explain Star and ring topology with example. [08]

(b) Solve the following example using Cyclic redundancy check [08]
Data=1101101
Divisor=10101

OR

(b) Define LAN, WAN and MAN in detail. [08]

Question: 3.

(a) Draw a layer architecture of the OSI reference model and explain it. [08]
(b) The following is a dump of a UDP header in hexadecimal format. [04]
CB84000D001C001C
- ✓ What is the source port number?
- ✓ What is the destination port number?
- ✓ What is the total length of the user datagram?
- ✓ What is the length of the data?

(c) Compare Connectionless and connection Oriented networks [04]

OR

(a) Draw a layer architecture of the TCP/IP model and explain it. [08]
(b) The following is a dump of a UDP header in hexadecimal format. [04]
0421000B002AE217
- ✓ What is the source port number?
- ✓ What is the destination port number?
- ✓ What is the total length of the user datagram?
- ✓ What is the length of the data?

(c) Compare circuit switching and Packet switching. [04]

Question: 4

(a) Explain TCP header with its fields. [08]
(b) Write a note on FTP. [08]

OR

(a) Explain UDP header with its fields. [08]
(b) Write a note on DORA Process. [08]

Question: 5.

(a) Compare Persistent and non-persistent HTTP. [06]
(b) Explain Distance vector routing with example. [06]
(c) Explain stop and wait for ARQ. [04]

OR

(a) Explain Multiplexing and Demultiplexing in detail. [06]
(b) Explain Link state routing with example. [06]
(c) Classify open loop and close loop principal of congestion control. [04]

Question: 6.

(a) Explain IPv4 header in detail. [08]
(b) Explain Hub and Switch [04]
(c) Write down IPv4 address classes with IP range. [04]

OR

(a) Explain Go back N ARQ and Selective Repeat ARQ in detail. [08]
(b) Explain types of error with example. [04]
(c) Write down Transport layer services. [04]

--Best of Luck---

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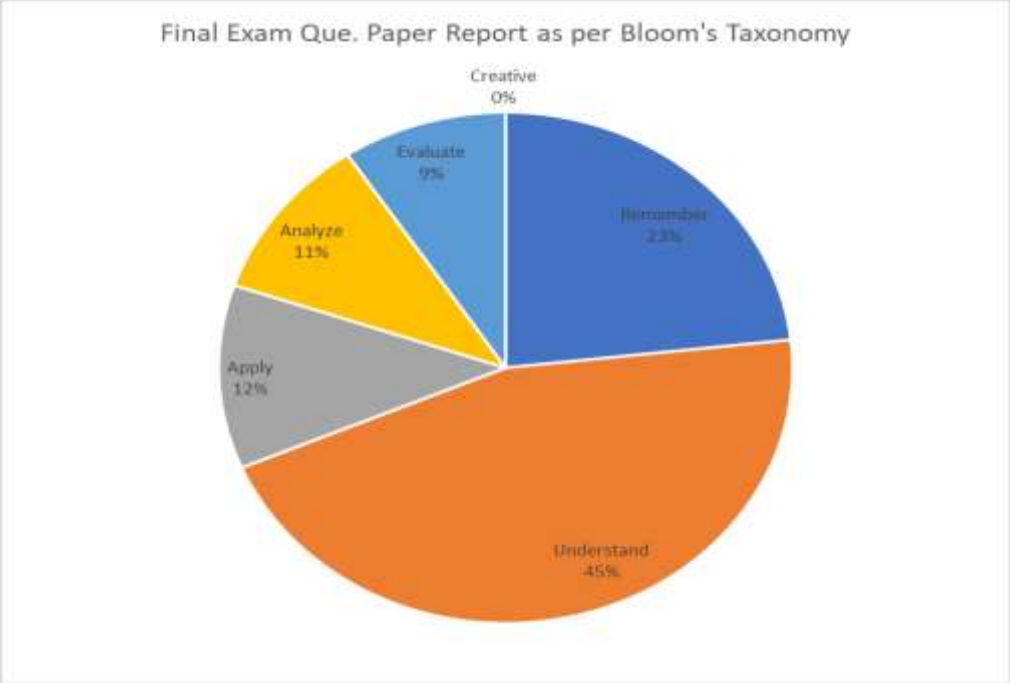
– Bloom'S Taxonomy Report –

Sub: Computer Networks
Sem.:4
Branch: IT

Que. Paper weightage as per Bloom's Taxonomy

LEVEL	% of weightage	Question No.	Marks of Que.
Remember/Knowledge	23.255814	q1(a,b),q6(a,b,c,or-c)	40
Understand	45.348837	q2(or-b),q3(a,or-a),q4(a,b,or-a,or-b),q5(c,or-a),q6(or-a,or-b)	78
Apply	11.627907	q2(a),q5(b,or-b)	20
Analyze	10.465116	q3(c,or-c),q5(a,or-c)	18
Evaluate	9.3023256	q2(b),q3(b,or-b)	16
Higher order Thinking/ Creative			

Chart/Graph of Bloom's Taxonomy



Course Outcome Wise Questions

Subject Code	**01IT1401**	Subject	**COMPUTER NETWORK**

CO No.	Course Outcome
CO1	Describe the importance of computer networks and various performance metrics.
	1(A), 1(B)
CO2	Distinguish and relate various protocols in layered architecture of computer networks.
	1(A), 1(B), 2(B), 3(A), 3(A-Or), 3(B), 3(B-Or), 3(C), 3(C-Or), 4(A), 4(A-Or), 4(B), 4(B-Or), 5(A), 5(A-Or), 5(C), 5(C-Or), 6(A), 6(A-Or), 6(B-Or), 6(C-Or)
CO3	Explain various topological and routing strategies for IP based networks.
	1(B), 2(A), 5(B), 5(B-Or), 6(C)
CO4	Prepare client server application using socket programming
	1(A)
CO5	Compare various devices and protocols that builds computer network.
	1(B), 2(B-Or), 6(B)

Blooms Taxonomy	Question List
Remember / Knowledge	1(A), 1(B), 6(A), 6(B), 6(C), 6(C-Or)
Understand	2(B-Or), 3(A), 3(A-Or), 4(A), 4(A-Or), 4(B), 4(B-Or), 5(A-Or), 5(C), 6(A-Or), 6(B-Or)
Apply	2(A), 5(B), 5(B-Or)
Analyze	3(C), 3(C-Or), 5(A), 5(C-Or)
Evaluate	2(B), 3(B), 3(B-Or)
Higher order Thinking / Creative	