Enroll. No._____

MARWADI UNIVERSITY

Faculty of Technology

Computer Engineering **B. Tech**

SEM: 4 **MU FINAL EXAM** **MAY: 2023**

Subject: - Computer Network (01CE0410) **Date:- 11/05/2023**

Total Marks:-100 **Time: - 02:00 PM to 05:00 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) Answer below the given MCQs [10]

1) File, Transfer, Access and Management (FTAM) is a function of which layer?
   a) Application Layer
   b) Transport Layer
   c) Session Layer
   d) Presentation Layer

2) TCP, FTP, Telnet, SMTP, POP etc. are examples of _____.
   a) Socket
   b) Protocol
   c) IP Address
   d) MAC Address

3) What is the port number of HTTP?
   a) 110
   b) 443
   c) 80
   d) 53

4) .in is the example of _____ domain.
   a) Generic
   b) Inverse
   c) Reverse
   d) Country

5) TCP packets are called _____.
   a) PDU
   b) Frames
   c) Datagrams
   d) Segments

6) Which address is transport layer address?
   a) IP Address
   b) MAC Address
   c) Port Address
   d) Special Address

7) What is the subnet mask of 10.11.12.13?
   a) 255.255.0.0
   b) 255.0.0.0
   c) 255.255.255.0
   d) 255.255.255.255

8) What is the full form of EIGRP?
   a) Enhanced Interior Gateway Routing Protocol
   b) Enhanced Internal Gateway Routing Protocol
   c) Enhanced Internet Gateway Routing Protocol
   d) Enhanced Intranet Gateway Routing Protocol

9) If number of "1 bits" in the entire word is odd, it is known as _____ parity.
   a) Add
   b) Extra
   c) Even
   d) Odd

10) Which one is the error detection technique?
   a) Reed Solomon Code
   b) Humming Code
   c) Convolution Code
   d) Cyclic Redundancy Check

(b) Answer the following questions [10]

1) Define Processing Delay.

2) Which OSI layer is support IP addressing?

3) What is the full form of SMTP?

4) POP3 is Mail Access Protocol. – **True or False?**

5) What is the full form of UDP?

6) Connection termination is required in TCP. – **True or False?**

7) What is the default subnet mask of class C?

8) What is the size (in bits) of IP address?

9) Burst error is also known as multiple bit error. – **True or False?**

10) What is the full form of VLAN?

Question: 2.

(a) Draw and discuss each layer functionality of OSI reference Model. [8]

(b) Define topology. List types of topologies. Explain any three topologies with diagram. [8]

OR

(b) Discuss TCP/IP model with appropriate diagram. [8]

Question: 3.

(a) Discuss SMTP, POP3 and IMAP with proper diagram. [8]

(b) Difference between persistent and non-persistent HTTP. [4]

(c) Write short note on working of HTTP. [4]

OR

(a) Explain the components of DNS. [8]

(b) What is the need of FTP? Discuss working of FTP. [4]

(c) Explain the DORA process in DHCP. [4]

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Question: 4.

(a) Draw and discuss each field of TCP header. [8]

(b) i) Write the difference between TCP and UDP. [8]
ii) Differentiate Flow control and Congestion Control.

OR

(a) Draw and discuss all the field of UDP header. Explain UDP checksum with example. [8]

(b) Discuss following error control protocols with example: [8]
i) GO-back-N ARQ protocol ii) Selective Repeat ARQ.

Question: 5.

(a) Draw and discuss IPV4 header. [6]

(b) Explain Distance Vector Routing protocol with appropriate diagram. [6]

(c) Compare IPV4 and IPV6. [4]

OR

(a) Give the classification of Unicast routing protocol. Explain the protocol which is used to communicate between two autonomous system. [6]

(b) Discuss the concept of EIGRP with example. [6]

(c) List classes of IP address with range. Write the default subnet mask class A, B & C. Explain host id and network id in class A, B & C with diagram. [4]

Question: 6.

(a) A bit stream is transmitted 1101101 using the CRC method. The generator polynomial is X^4+X^2+1. What is the actual bit stream transmitted? [8]

(b) Discuss the concept of VLAN. Explain different types of VLAN. [4]

(c) Write short note on CSMA/CD and CSMA/CA. [4]

OR

(a) Calculate the checksum of given frame: [8]
Frame1 - 11001100, **Frame2 -** 10101010, **Frame3 -** 11110000, **Frame4 –** 11000011.
Justify your answer whether data accepted or rejected at receiver side?

(b) Discuss Byte stuffing and Bit Stuffing with example. [4]

(c) Differentiate LAN & WAN. [4]

---Best of Luck---

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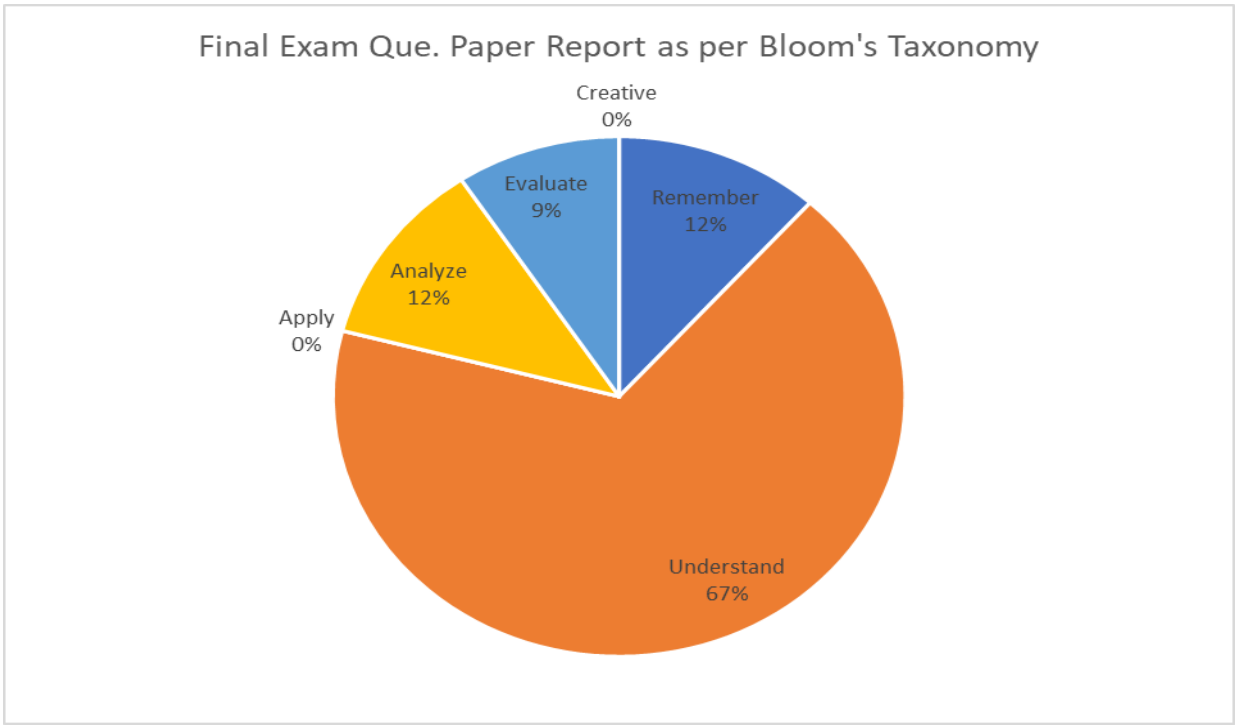
– Bloom's Taxonomy Report –

Sub: Computer Network
Sem. 4th Semester
Branch: Computer Engineering

Que. Paper weightage as per Bloom's Taxonomy

LEVEL	% of weightage	Question No.	Marks of Que.
Remember/Knowledge	11.63	Q – 1 (a), Q – 1(b)	20
Understand	67.44	Q – 2(a), Q – 2(b), OR Q – 2(b), Q – 3(a), Q – 3(b), OR Q – 3(a), OR Q – 3(b), OR Q – 3 (c), Q – 4(a), OR Q – 4(a), OR Q – 4(b), Q – 5(a), Q – 5(b), OR Q – 5(a), OR Q – 5(b), OR Q – 5(c), Q – 6(b), Q – 6(c), OR Q – 6(b)	116
Apply	0.00		
Analyze	11.63	Q – 3(b), Q – 4 (b), Q – 5 (c), OR Q – 6(c)	20
Evaluate	9.30	Q – 6(a), OR Q – 6(a)	16
Higher order Thinking/ Creative	0.00		

Chart/Graph of Bloom's Taxonomy



Course Outcome Wise Questions

Subject Code	**01CE0410**	Subject	**COMPUTER NETWORK**

CO No.	Course Outcome
CO1	Understand the basic terminologies used in networking, various networking topologies, switching techniques and layered architecture of computer network. (Understand)
	1(A), 1(B), 2(A), 2(B), 2(B-Or), 6(C-Or)
CO2	Understand various networking protocols of application layer. (Understand)
	1(A), 1(B), 3(A), 3(A-Or), 3(B), 3(B-Or), 3(C), 3(C-Or)
CO3	Distinguish connection oriented and connection less protocols used for reliable data transfer and relate with flow control and congestion control. (Analyse)
	1(A), 1(B), 4(A), 4(A-Or), 4(B), 4(B-Or)
CO4	Apply the concept of IP addressing and subnetting for IP based networks also demonstrate routing protocols. (Apply)
	1(A), 1(B), 5(A), 5(A-Or), 5(B), 5(B-Or), 5(C), 5(C-Or)
CO5	Demonstrate error correction and error detection techniques in data link layer, use of random access and CSMA protocol. (Apply)
	1(A), 1(B), 6(A), 6(A-Or), 6(B), 6(B-Or), 6(C)

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