Enroll. No._____

MARWADI UNIVERSITY

Faculty of Technology / Faculty of Engineering

Computer Engineering **B. Tech**

SEM: 4 **MU FINAL EXAM/ MU FINAL REMEDIAL** **MAY: 2024**

Subject: - Computer Network (01CE0410) **Date:- 01/05/2024**

Total Marks:-100 **Time: - 12:30 PM to 03:30 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) Which layer is the important for logical addressing?
   a) Network Layer b) Transport Layer
   c) Session Layer d) Presentation Layer

2) TCP is _____ layer protocol.
   a) Network b) Transport
   c) Application d) Physical

3) What is the port number of HTTPS?
   a) 95 b) 80
   c) 443 d) 119

4) .uk is belongs to _____ domain.
   a) Reverse b) Generic
   c) Inverse d) Country

5) UDP packets are known as _____.
   a) Datagram b) Bits
   c) Packet Data d) Segments

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

7) What is the default subnet mask of 210.111.122.130?
   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 OSPF?
   a) Open Shortest Path Final b) Open Small Path First
   c) Open Same Path First d) Open Shortest Path First

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

10) Which one is not an error detection technique?
   a) Parity Check b) Humming Code
   c) Checksum d) CRC

(b) Answer the following questions [10]

1) Define computer network.
2) Which OSI layer is support Port addressing?
3) What is the full form of IMAP?
4) Persistent HTTP is the connection of HTTP. – **True or False?**
5) What is the full form of TCP?
6) Connection termination is required in UDP. – **True or False?**
7) What is the range of class A IP address in IPV4?
8) What is the size (in bits) of IPV6 address?
9) Byte stuffing method is also known as Character Oriented. – **True or False?**
10) Write the full form of CRC?

Question: 2.

(a) Sketch the diagram of OSI model & explain the role of each OSI layer. [8]

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

OR

(b) Explain any four network topologies with diagram also write merits & demerits. [8]

Question: 3.

(a) List the protocols which are used in email. Explain all those protocols with diagram. [8]

(b) Explain the concept of File transfer protocol. [4]

(c) Define WWW. Discuss the working of WWW. [4]

OR

(a) Explain all 4 DNS components in detail with appropriate diagram. [8]

(b) Write short note on request and response message of http with proper diagram. [4]

(c) Distinguish persistent and non-persistent http. [4]

Question: 4.

(a) Draw and discuss TCP segment header structure. [8]

(b) i) Write the difference between Connection oriented and connection less. [8]
ii) Differentiate congestion control and flow Control.

OR

(a) Explain the concept of multiplexing and demultiplexing in transport layer. [8]

(b) Explain the process of connection establishment and connection release process. [8]

Question: 5.

(a) Draw IPV4 header format and explain the functionality of each field of IPV4 header. [6]

(b) Explain Routing Information Protocol with appropriate diagram. [6]

(c) Make a list of IP address class with its range. What are the default subnet mask of class A, B & C. Draw and explain network id and host id in class A, B & C. [4]

OR

(a) Discuss Link state routing protocol with proper diagram. [6]

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

(c) Distinguish between IPV4 address and IPV6 address. [4]

Question: 6.

(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) Write a shot note on virtual local area network. [4]

(c) Discuss the concept of variable size framing in terms of character oriented and Bit oriented with example. [4]

OR

(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) Differentiate OSI model and TCP/IP model. [4]

(c) Write short note on random access collision sense protocol for collision detection and collision avoidance. [4]

---Best of Luck---

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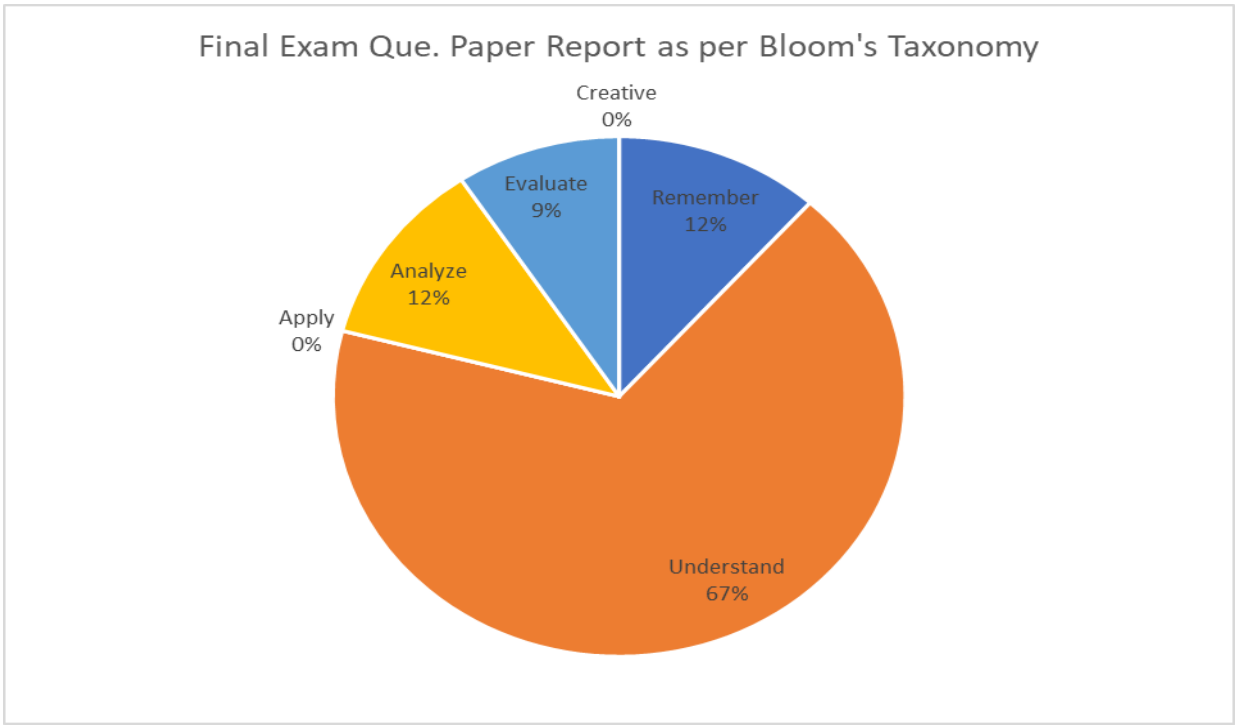
– Bloom's Taxonomy Report –

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), Q – 3 (c), OR Q – 3(a), OR Q – 3(b), Q – 4(a), OR Q – 4(a), OR Q – 4(b), Q – 5(a), Q – 5(b), Q – 5(c), OR Q – 5(a), OR Q – 5(b), Q – 6(b), Q – 6(c), OR Q – 6(c)	116
Apply	0.00		
Analyze	11.63	OR Q – 3(c), Q – 4 (b), OR Q – 5 (c), OR Q – 6(b)	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(B-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(C), 6(C-Or)

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), 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), 6(B), 6(C), 6(C-Or)
Apply	
Analyze	4(B), 5(C-Or), 6(B-Or)
Evaluate	6(A), 6(A-Or)
Higher order Thinking / Creative	