**MARWADI UNIVERSITY**

**Faculty of Engineering & Technology**

**(ICT)**

**(Computer Networks)**     **SEM: 5th**     **MID-SEM. EXAM: I**     **September: 2023**

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**Subject: - (Computer Network) (01CT0503)**                    **Date:- 18/09/2023**

**Total Marks:-30**                                                          **Time: - 75 Minutes**

**Instructions:**
1. Attempt all questions.
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.**                                                                    [6]

(a) Assume that you have made a request for a web page through your web browser to a web server. Initially the browser cache is empty. Further, the browser is configured to send HTTP requests in non-persistent mode. The web page contains text and five very small images. The minimum number of TCP connections required to display the web page completely in your browser is _____.
    i.    1
    ii.   5
    iii.  6
    iv.  18

(b) In one of the pairs of protocols given below, both the protocols can use multiple TCP connections between the same client and the server. Which one is that?

    i.     HTTP, FTP
    ii.    HTTP, TELNET
    iii.   FTP, SMTP
    iv.   HTTP, SMTP

(c) Consider different activities related to email:
m1: Send an email from a mail client to a mail server
m2: Download an email from mailbox server to a mail client
m3: Checking email in a web browser
Which is the application level protocol used in each activity?

    i.     m1: HTTP m2: SMTP m3: POP
    ii.    m1: SMTP m2: FTP m3: HTTP
    iii.   m1: SMTP m2: POP m3: HTTP
    iv.   m1: POP m2: SMTP m3: IMAP

(d) Which one of the following uses UDP as the transport protocol?
    i.    HTTP
    ii.   Telnet
    iii.  DNS
    iv.  SMTP

(e) Identify the correct sequence in which the following packets are transmitted on the network by a host when a browser requests a webpage from a remote server, assuming that the host has just been restarted.

    i.     HTTP GET request, DNS query, TCP SYN
    ii.    DNS query, HTTP GET request, TCP SYN
    iii.   DNS query, TCP SYN, HTTP GET request
    iv.   TCP SYN, DNS query, HTTP GET request

(f) Which of the following is/are example(s) of stateful application layer protocols?
(i) HTTP
(ii) FTP
(iii) TCP
(iv) POP3

    i.     .(i) and (ii) only
    ii.    .(ii) and (iii) only
    iii.   .(ii) and (iv) only
    iv.   .(iv) only

## Question: 2.                                                                 [12]

(a) What is OSI Model? Explain the functions of each layer?                     [6]

(b) Define computer networks? Discuss various types of networks topologies in computer network. Also discuss various advantages and disadvantages of each Topology                                                                        [6]

**OR**

(c) Explain about the different types of connecting devices in computer networks?    [6]

## Question: 3.                                                                 [12]

(a) Write a note on HTTP. Also write its advantage and disadvantage             [8]

(b) What are the applications of computer network?                              [4]

**OR**

(c) Write a note on SMTP. Also Explain the function of SMTP.                    [8]

(d) If a file consisting of 50,000 characters takes 40 seconds to send, then the data rate is _____.                                                      [4]
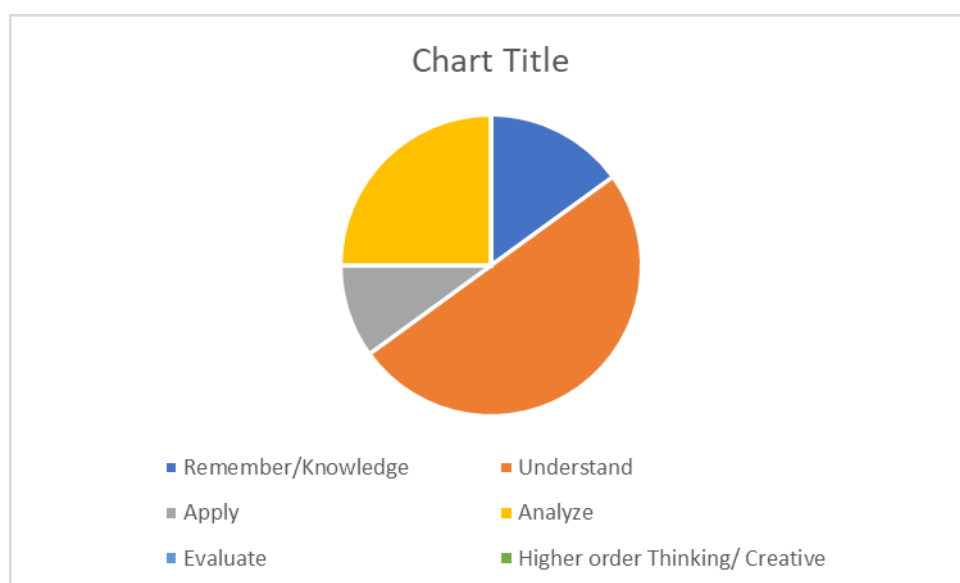
*---Best of Luck---*

**Sub: Computer Network**
**Sem. 5th**
**Branch: ICT**

# Que. Paper weightage as per Bloom's Taxonomy

| LEVEL | % of weightage | Question No. | Marks of Que. |
|---|---|---|---|
| Remember/Knowledge | 15 | 1{d,f} 3{b} | 6 |
| Understand | 50 | 2{a,b},3{a,c} | 24 |
| Apply | 10 | 1{a,b,c,e} | 4 |
| Analyze | 25 | 2{c},3{d} | 10 |
| Evaluate | 0 | | |
| Higher order Thinking/ Creative | 0 | | |

## Chart/Graph of Bloom's Taxonomy

# Course Outcome Wise Questions

| Subject Code | **01CT0503** | | Subject | **COMPUTER NETWORKS** |
|---|---|---|---|---|

| CO No. | Course Outcome |
|---|---|
| **CO1** | Understand the functionality of various protocols, models and networks. |
| | **1(A), 2(A), 3(A)** |
| **CO2** | Analyze various flow and error control algorithms |
| | |
| **CO3** | Analyze different medium access protocols and network hardware component. |
| | **1(A), 2(B)** |
| **CO4** | compare various static and dynamic routing protocol. |
| | |
| **CO5** | Understand various transport services, protocol and application layer functionalities. |
| | **3(A-Or), 3(B), 3(B-Or)** |
| **CO6** | Built and test various network topologies and routing protocols for various networks scenarios. |
| | **1(A), 2(B-Or)** |

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