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**COLLEGE OF ENGINEERING AND TECHNOLOGY**  
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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**QUESTION BANK**

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**Degree & Branch** : B.E – ECE  
**Year & Semester** : III/ VI  
**Section** : ECE  
**Subject Code** : CS6551  
**Subject Name** : COMPUTER NETWORKS  
**Name of the Teacher** : : Mr.M.VARUN

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**UNIT - I**  
**PART A**

|    |   |            |        |
|----|---|------------|--------|
| 1  | <b>Describe</b> computer networks.  | Remember   | BTL -1 |
| 2  | What <b>differentiates</b> a computer network from other types of networks?           | Analyze    | BTL -4 |
| 3  | <b>Differentiate</b> Internetworking and Intranetworking?                             | Understand | BTL -2 |
| 4  | How would you <b>describe</b> routing?  | Remember   | BTL -1 |
| 5  | Can you <b>list</b> three general classes of failure?                                 | Remember   | BTL -1 |
| 6  | In what way would you <b>summarize</b> circuit switched and packet switched networks? | Evaluate   | BTL -5 |
| 7  | <b>Define</b> router and gateway.   | Remember   | BTL -1 |
| 8  | <b>Compare and contrast</b> Unicast, Multicast, and Broadcast?                        | Analyze    | BTL -4 |
| 9  | <b>Define</b> protocol.   | Remember   | BTL -1 |
| 10 | Can you <b>interpret</b> what is happening in synchronous time division multiplexing? | Understand | BTL -2 |
| 11 | How would you <b>describe</b> Multiplexing and Demultiplexing?                        | Remember   | BTL -1 |
| 12 | <b>Compare</b> LAN, WAN and MAN?  | Analyze    | BTL -4 |
| 13 | How would you <b>illustrate</b> the basic idea behind error detection?                | Apply      | BTL -3 |
| 14 | <b>Discuss</b> about socket.  | Understand | BTL -2 |
| 15 | What would happen if the acknowledgement to the original packet is                    | Create     | BTL -6 |

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|    | lost? Draw the timeline for this scenario.  |            |        |
| 16 | <b>Solve</b> the following:<br>How many bits of data in a transcontinental channel with a one-way latency of 50ms and a bandwidth of 45Mbps can hold? | Apply      | BTL -3 |
| 17 | <b>Demonstrate</b> your understanding of character stuffing?  | Apply      | BTL -3 |
| 18 | How would you <b>formulate</b> Shanon's Theorem?  | Create     | BTL -6 |
| 19 | How would you <b>summarize</b> Manchester encoding? Draw the NRZ encoding for the bit stream 0010111101000010.  | Understand | BTL -2 |
| 20 | Can you <b>discriminate</b> bandwidth and latency?  | Evaluate   | BTL -5 |

### PART B

|   |   |            |        |
|---|---|------------|--------|
| 1 | How would you <b>summarize</b> the requirements of building a network? (16)   | Understand | BTL -2 |
| 2 | <b>Explain</b> in detail about internet architecture with neat diagram? (16)  | Analyze    | BTL -4 |
| 3 | <b>Examine</b> OSI architecture with neat diagram? (16)   | Remember   | BTL -1 |
| 4 | <b>Evaluate</b> and explain about your understanding about network software? (8)<br>Explain in detail about sockets. (8)  | Evaluate   | BTL -5 |
| 5 | <b>Summarize</b> about performance of computer network? (16)  | Understand | BTL -2 |
| 6 | Will you state and <b>describe</b> in your own words about<br>a) Byte-oriented framing. (6)<br>b) Bit-oriented framing. (5)<br>c) Clock-based framing. (5)                    | Understand | BTL -1 |
| 7 | a) Based on what you learn <b>develop</b> a model for Two – Dimensional parity. (8)<br>b) Based on what you learn <b>develop</b> a model for Internet Checksum Algorithm. (8) | Create     | BTL -6 |
| 8 | (a) How would you <b>illustrate</b> your view of Cyclic Redundancy Check? (8)   | Apply      | BTL -3 |
|   | (b) <b>Calculate</b> CRC using polynomial long division method for the following data: (8)<br>$M(x) = 10011010$   | Apply      | BTL -3 |

|    |  |      |                 |
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|    | C(x) = 1101  |      |                 |
| 9  | <b>Explain</b> in detail about Stop-and-wait protocol. | (16) | Analyze BTL -4  |
| 10 | <b>Describe</b> Sliding Window Protocol in detail?     | (16) | Remember BTL -1 |

**UNIT-II**  
**PART A**

|    |   |            |        |
|----|---|------------|--------|
| 1  | <b>Describe</b> Media Access Control?   | Remember   | BTL -1 |
| 2  | How would you <b>describe</b> repeater?   | Remember   | BTL -1 |
| 3  | How will you <b>summarize</b> an Ethernet Adaptor?                                  | Understand | BTL -5 |
| 4  | <b>Define</b> Exponential backoff?  | Remember   | BTL -1 |
| 5  | <b>Define</b> Bluetooth?  | Remember   | BTL -1 |
| 6  | Can you <b>classify</b> the steps of Scanning?                                      | Analyze    | BTL -4 |
| 7  | Can you <b>explain</b> what Piconet is?   | Understand | BTL -4 |
| 8  | How would you <b>describe</b> access point?   | Remember   | BTL -1 |
| 9  | <b>Differentiate</b> switching and bridging?  | Analyze    | BTL -2 |
| 10 | Can you <b>explain</b> virtual circuit switching?                                   | Analyze    | BTL -4 |
| 11 | <b>Illustrate</b> the function of hop by hop flow control?                          | Apply      | BTL -3 |
| 12 | How will you <b>develop</b> a virtual private network?                              | Create     | BTL -6 |
| 13 | What examples can you find to <b>illustrate</b> tunneling?                          | Apply      | BTL -3 |
| 14 | <b>Show</b> your understanding about payload?                                       | Apply      | BTL -3 |
| 15 | How would you <b>design</b> Class A, Class B and Class C of IP addresses?           | Create     | BTL -6 |
| 16 | <b>Discuss</b> the 2 scaling concerns that the CIDR addresses.                      | Understand | BTL -2 |
| 17 | <b>Give</b> the ARP packet format for mapping IP addresses into Ethernet addresses. | Evaluate   | BTL -2 |
| 18 | <b>Summarize</b> the DHCP packet format.  | Evaluate   | BTL -5 |
| 19 | How would you <b>define</b> ICMP.   | Remember   | BTL -1 |
| 20 | <b>Differentiate</b> forwarding and routing.  | Understand | BTL -2 |

**PART B**

|   |   |          |        |
|---|---|----------|--------|
| 1 | a) How will you <b>describe</b> the Physical properties of Ethernet | Remember | BTL -1 |
|---|---|----------|--------|

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|    | (802.3)? Detail your answer with neat illustration? (8)<br><b>b) Describe</b> in detail about access protocols in IEEE802.3 Ethernet. (8)   |            |        |
| 2  | How would you <b>demonstrate</b> your understanding of problems about Ethernet LAN? (16)  | Apply      | BTL -3 |
| 3  | <b>a) Explain</b> in detail about collision avoidance in Wi-Fi (802.11)(8)<br><b>b) Explain</b> in detail about distribution system in Wi-Fi (802.11)(8)                                | Analyze    | BTL -4 |
| 4  | How would you <b>describe</b> about Bluetooth and explain with neat sketch about its architecture? (16)   | Remember   | BTL -1 |
| 5  | a) How would you <b>differentiate</b> Switching and Bridging? Explain with neat diagram. (8)<br><b>b) Summarize</b> your understanding about virtual Circuit switching. (8)             | Understand | BTL -2 |
| 6  | <b>i) Explain</b> in detail about the service model and global addressing of Internet Protocol. (8)<br><b>ii) Explain</b> in detail about datagram forwarding and subnetting in IP. (8) | Analyze    | BTL -4 |
| 7  | <b>Define</b> ARP? <b>Describe</b> the details with neat diagram. (16)  | Understand | BTL -1 |
| 8  | Will you state and <b>summarize</b> in your own words about CIDR. (16)  | Understand | BTL -2 |
| 9  | <b>Evaluate</b> DHCP and explain in detail about DHCP? (16)   | Evaluate   | BTL -5 |
| 10 | Based on what you learn <b>develop</b> a model of ICMP? (16)  | Create     | BTL -6 |

### UNIT-III

#### PART A

|   |   |            |        |
|---|---|------------|--------|
| 1 | Compare and <b>contrast</b> Forwarding and Routing?                         | Understand | BTL -2 |
| 2 | How would you <b>describe</b> Interior Gateway Protocol (IGP)?              | Remember   | BTL -1 |
| 3 | Can you <b>differentiate</b> the two different classes of routing protocol? | Analyze    | BTL -4 |
| 4 | How would you <b>describe</b> distance vector routing?                      | Remember   | BTL -1 |
| 5 | In what way would you <b>rank</b> convergence?                              | Evaluate   | BTL -5 |
| 6 | <b>Define</b> count to infinity problem.                                    | Remember   | BTL -1 |

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| 7  | <b>Interpret</b> about split horizon with poison reverse?                       | Understand | BTL -2 |
| 8  | <b>Define</b> Split horizon.  | Remember   | BTL -1 |
| 9  | <b>Discuss</b> about RIP.   | Understand | BTL -2 |
| 10 | <b>Define</b> Link State Routing.   | Remember   | BTL -1 |
| 11 | Can you <b>infer</b> the sketch of IPv6 Packet Header?                          | Analyze    | BTL -4 |
| 12 | <b>Give</b> the OSPF header format?   | Understand | BTL -2 |
| 13 | <b>Define</b> Reliable Flooding.  | Remember   | BTL -1 |
| 14 | <b>Explain</b> Load Balancing?  | Analyze    | BTL -4 |
| 15 | <b>Illustrate</b> about Switching?  | Apply      | BTL -3 |
| 16 | <b>Rewrite</b> in your own words about Line Rate?                               | Create     | BTL -6 |
| 17 | Can you <b>compare</b> IPv4 and IPv6?   | Evaluate   | BTL -5 |
| 18 | What examples can you find to <b>deminstrate</b> compute delay for the packet?  | Apply      | BTL -3 |
| 19 | How would you <b>show</b> your understanding of Multicast?                      | Apply      | BTL -3 |
| 20 | Based on what you know, <b>generalize</b> the term Network Address Translation? | Create     | BTL -6 |

| <b>PART B</b> |   |            |        |
|---------------|---|------------|--------|
| 1             | <b>Describe</b> in detail about Switching and Forwarding? (16)  | Remember   | BTL -1 |
| 2             | Can you <b>substitute</b> an alternative protocol forPIM? Justify your answer. (16)   | Evaluate   | BTL -5 |
| 3             | <b>a) Apply</b> your understanding about Packet format of IPv6? (8)<br><b>b) Apply</b> your understanding about Global Unicast Addresses of IPv6? (8)                           | Apply      | BTL -3 |
| 4             | a) How would you <b>summarize</b> the challenges ininterdomain routing? (8)<br>b) How would you <b>summarize</b> the basics of BGP and common AS relationship and policies? (8) | Understand | BTL -2 |
| 5             | <b>Describe</b> in detail about RIP. (16)   | Remember   | BTL -1 |
| 6             | (a) Can you <b>discuss</b> in detail what is happening in link state? (8)<br>(b) <b>Discuss</b> about subnetting. (8)   | Understand | BTL -2 |
| 7             | <b>a) Examine</b> the elements used in defining the Multicast? Explain in detail. (8)<br><b>b) Apply</b> your understanding about Multicast Addresses. (8)                      | Apply      | BTL -3 |
| 8             | <b>Pointout</b> the function of DVMRP? Narrate in detail. (16)  | Analyze    | BTL -4 |
| 9             | <b>a) Describe</b> in detail about the OSPF. (8)<br><b>b) Describe</b> in detail about reliable flooding. (8)   | Remember   | BTL -1 |
| 10            | <b>Generalize</b> and explain about Multicast address? (16)   | Create     | BTL -6 |

**UNIT-IV**  
**PART A**

|   |   |            |        |
|---|---|------------|--------|
| 1 | How would you <b>describe</b> the header format of UDP?                         | Remember   | BTL -1 |
| 2 | What ideas can you <b>pointout</b> that TCP is a reliable byte stream protocol? | Analyze    | BTL -4 |
| 3 | <b>Differentiate</b> UDP and TCP?   | Understand | BTL -2 |
| 4 | How would you <b>describe</b> the header format of TCP?                         | Remember   | BTL -1 |
| 5 | Can you <b>list</b> the three ways of handshake?                                | Remember   | BTL -1 |
| 6 | <b>Measure</b> the performance of TCP State Transition Control?                 | Evaluate   | BTL -5 |
| 7 | <b>Define</b> nagles algorithm.   | Remember   | BTL -1 |



|    |   |            |        |
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| 8  | What would you <b>infer</b> from the term RTT?                                  | Analyze    | BTL -4 |
| 9  | <b>Define</b> Estimated RTT.  | Remember   | BTL -1 |
| 10 | <b>Summarize</b> what is happening in Congestion Control?                       | Understand | BTL -2 |
| 11 | <b>Define</b> RED.  | Remember   | BTL -1 |
| 12 | <b>Analyze</b> the value or importance of Congestion Window?                    | Analyze    | BTL -4 |
| 13 | <b>Apply</b> your understanding of AIMD?  | Apply      | BTL -3 |
| 14 | <b>Give</b> the processes involved in Slow Start?                               | Understand | BTL -2 |
| 15 | <b>Combine</b> your opinion about integrated service?                           | Create     | BTL -6 |
| 16 | What examples can you find to <b>demonstrate</b> Quality of service approaches? | Apply      | BTL -3 |
| 17 | How would you <b>show</b> your understanding of admission control?              | Apply      | BTL -3 |
| 18 | Based on what you know, <b>generalize</b> the term Differentiated service?      | Create     | BTL -6 |
| 19 | How would you <b>summarize</b> Expedited forwarding?                            | Understand | BTL -2 |
| 20 | Can you <b>assess</b> the reason behind assured forwarding?                     | Evaluate   | BTL -5 |

### PART B

|   |   |            |        |
|---|---|------------|--------|
| 1 | How would you <b>describe</b> the operation of TCP with neat sketch on it?<br>(16)  | Remember   | BTL -1 |
| 2 | <b>Explain</b> in detail about sliding window protocol? (16)  | Analyze    | BTL -4 |
| 3 | i) <b>Describe</b> in detail about UDP header format with neat sketch.(8)<br>ii) <b>Describe</b> in detail about UDP message queue technique with neat sketch. (8)  | Remember   | BTL -1 |
| 4 | i) How would you <b>differentiate</b> UDP and TCP? (8)<br>ii) Will you state or interpret in your own words about flow control in TCP and UDP with an example. (8)  | Understand | BTL -2 |
| 5 | i) <b>Describe</b> in detail about the three way handshake protocol for connection establishment in TCP. (8)<br>ii) Describe in detail about reliable flooding. (8) | Remember   | BTL- 1 |
| 6 | How would you <b>summarize</b> TCP congestion control like<br>i) AIMD (6)<br>ii) Slow start (5)<br>iii) Fast transmit and fast recovery (5)                         | Understand | BTL -2 |



|    |   |          |        |
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| 7  | How would you <b>apply</b> your understanding about the RED algorithm?<br>Explain in detail. (16)                             | Apply    | BTL -3 |
| 8  | <b>Explain</b> in detail about congestion avoidance in TCP like<br>i) DECbit (8)<br>ii) Source based congestion avoidance (8) | Analyze  | BTL -4 |
| 9  | What conclusions can you draw in analyzing RSVP protocol?<br><b>Support</b> your answer with a neat sketch. (16)              | Evaluate | BTL -5 |
| 10 | Based on what you know, <b>generalize</b> the term differentiated services?<br>(16)   | Create   | BTL -6 |

**UNIT-V  
PART A**

|    |   |            |        |
|----|---|------------|--------|
| 1  | How would you <b>describe</b> the message format of SMTP?   | Remember   | BTL -1 |
| 2  | Can you <b>list</b> the five types of HTTP result codes?  | Analyze    | BTL -1 |
| 3  | How would you <b>rank</b> the hierarchy of name servers?  | Evaluate   | BTL -5 |
| 4  | <b>Analyze</b> the value or importance of SNMP?   | Analyze    | BTL -4 |
| 5  | Can you <b>list</b> the three basic pieces of MIME?   | Remember   | BTL -1 |
| 6  | Can you <b>interpret</b> what is happening in the state transition of IMAP?                             | Understand | BTL -2 |
| 7  | <b>Differentiate</b> IMAP and SMTP.   | Understand | BTL -2 |
| 8  | <b>Test</b> what would happen when you try to open a URL?   | Evaluate   | BTL -5 |
| 9  | Can you <b>summarize</b> what is happening in TCP connection?   | Understand | BTL -2 |
| 10 | <b>Explain</b> Management Information Box?  | Remember   | BTL -4 |
| 11 | How would you <b>describe</b> a Web Service?  | Remember   | BTL -1 |
| 12 | How would you <b>summarize</b> SOAP message structure?  | Understand | BTL -2 |
| 13 | How would you <b>apply</b> your understanding of WSDL?  | Apply      | BTL -3 |
| 14 | What information would you use to <b>generalize</b> the view that SIP is an application-layer protocol? | Create     | BTL -6 |
| 15 | <b>Define</b> Routing overlay.  | Remember   | BTL -1 |
| 16 | <b>Illustrate</b> the protocol used for simple mail exchange?   | Apply      | BTL -3 |
| 17 | <b>Define</b> name resolution.  | Remember   | BTL -1 |
| 18 | <b>Compare</b> GET and SET in SNMP?   | Analyze    | BTL -4 |
| 19 | What examples can you find to <b>demonstrate</b> B 2 B integration?                                     | Apply      | BTL -3 |

|    |  |        |        |
|----|--|--------|--------|
| 20 | Based on what you know, <b>generalize</b> the term Message Exchange Pattern? | Create | BTL -6 |
|----|--|--------|--------|

**PART B**

|    |  |            |        |
|----|--|------------|--------|
| 1  | <b>Describe</b> in detail about Traditional applications? (16)   | Remember   | BTL -1 |
| 2  | What elements would you use to <b>demonstrate</b> the MIME type? Explain in detail. (16)   | Apply      | BTL -3 |
| 3  | i) Summarize the request message format of HTTP. (8)<br>ii) Summarize the response message format of HTTP. (8)                                 | Create     | BTL -5 |
| 4  | How would you <b>summarize</b> the concepts of SMTP? (16)  | Understand | BTL -2 |
| 5  | Can you <b>associate</b> what is happening in Domain Name Server? (16)   | Understand | BTL -2 |
| 6  | What approach would you use to <b>demonstrate</b> network management protocol? (16)  | Apply      | BTL -3 |
| 7  | <b>Describe</b> in detail about the following in Electronic mail.<br>i) Message format (6)<br>ii) Message transfer (5)<br>iii) Mail reader (5) | Remember   | BTL -1 |
| 8  | What is the function of POP3? <b>Explain</b> in detail.  | Analyze    | BTL -4 |
| 9  | Can you <b>substitute</b> an alternative protocol for IMAP? Justify your answer. (16)  | Evaluate   | BTL -6 |
| 10 | (a) <b>Describe</b> in detail about the WSDL in web services. (8)<br>(b) <b>Describe</b> in detail about SOAP in web services. (8)             | Remember   | BTL -1 |