DEPARTMENT OF INFORMATION TECHNOLOGY

U23ITT44-COMPUTER NETWORKS

II YEAR IT – REGULATION 2023

PART – B QUESTIONS

UNIT-I

1. Discuss in detail about Internet Architecture. **[APR/MAY-2015,17]** or Draw the OSI Network architecture and explain the functionalities of every layer in detail. **[NOV/DEC - 2012]**
2. What is the need for error detection? Explain with typical examples. Explain methods used for error detection and error correction. **[APR/MAY-2015,2016,17]** ,**[NOV/DEC -2012]**
3. Discuss the issues in Data link layer **[NOV/DEC -2014]** (or) Discuss the framing technique used in HDLC. What is the effect of errors on this framing? **[MAY/JUNE – 2013,17]** ,**[NOV/DEC-2013]**
4. Discuss briefly about Link level flow control **[NOV/DEC -12,16]**
5. How frame order and flow control is achieved using the data link layer? **[MAY/JUNE -2014,NOV/DEC-2015]**
6. Explain the TCP/IP reference model with neat sketch
7. Explain the different types of switching networks and list out its advantages and disadvantages
8. Explain the four basic network topologies and explain with its relevant features
9. Distinguish between point-to-point links and multi-point links with relevant diagram
10. What are the different types of transmission media available? Explain the various standards of guided and unguided media

UNIT – II

1. Explain in detail about the access method and frame format used in Ethernet (IEEE 802.3). **[APR/MAY-2015]** Describe the transmitter algorithm implemented at the sender side of the Ethernet protocol. Why should Ethernet frame should be 512 bytes long? **[NOV/DEC-2013]**
2. Discuss the MAC layer functions of IEEE 802.11 and briefly define key requirements of wireless LAN. **[APR/MAY-2015,MAY/JUNE-2016,17] [NOV/DEC-2013,15]**
3. Discuss the IP addressing methods **[MAY/JUNE-2014] & [APR/MAY-2011]**
4. Write short notes on ARP and DHCP. **[MAY/JUNE-14,16,17, NOV/DEC-12]**
5. Describe with example how CIDR addresses the two scaling concerns in the internet. Write in detail about ICMP **[NOV/DEC-2013, MAY/JUNE-2016,17]**
6. Briefly define key requirements of Wireless LAN. **[APRIL/MAY – 2015]**
7. Explain the architecture of a frame relay network with a neat sketch (**APRIL/MAY – 2013**)
8. List out the types of Ethernet. Explain in detail standard Ethernet and fast Ethernet in detail (**NOV/DEC -12)(NOV/DEC -11)**
9. Explain the flow and error control mechanisms in data link control **(NOV/DEC -11)**
10. Explain the random access protocols in data link layer **(NOV/DEC -15)**

UNIT – III

1. Discuss briefly about RIP and OSPF. **[APR/MAY-2015],[MAY/JUNE-2012],[MAY/JUNE-2014,2016,17]& [NOV/DEC2014,2015,16]**
2. Write about IPv6 in detail. What are its new features and improvements. **[NOV/DEC 10,11], [MAY/JUNE 2012],[MAY/JUNE-2016]**
3. What is internet Multicasting? Explain in detail. **[NOV/DEC-14,15,April 17]**
4. Describe the Interdomain routing (Border Gateway Protocol).
5. Explain in detail about Switch basics and Routing Areas
6. Explain the different classes of IP addressing **(MAY/JUNE -12)**
7. Explain in detail the ICMP message format and error reporting in detail **(MAY/JUNE -13)**
8. Define bridge. Explain the features and types of bridges **(NOV/DEC -11)**
9. Draw the IPV4 header format and explain the various components and its role in that format **(MAY/JUNE -12)**
10. Explain in detail the role of ARP and RARP

UNIT – IV

1. Explain in detail about TCP congestion avoidance algorithms. **[NOV/DEC 2011] , [MAY/JUNE2014]**
2. Explain TCP congestion control mechanisms in detail. **[NOV/DEC 16,12,MAY/JUNE2014,2016,15,17]**
3. Draw and explain TCP state transition diagram [NOV/DEC-2015] With neat Architecture, Explain TCP in detail **[MAY/JUNE 2013]**
4. Explain TCP 3 way Handshake in detail? **[APR/MAY-2015]**
5. TCP operates over a 1-Gbps link. **[MAY/JUNE 2013]**
   a) How long would it take for the TCP sequence numbers to wrap around completely?
   b) Suppose an added 32-bit timestamp field increments 1000 times during the wraparound time you found out above. How long would it take for the timestamp to wrap around?
6. Explain the various fields of the TCP header and working of the TCP protocol. **[NOV 16, APRIL / MAY 2015,17]**
7. Define UDP. Discuss its operation. Explain UDP Checksum with one example. **[MAY / JUNE -16]**
8. Explain in detail, the transmission control protocol
9. Explain in detail the techniques to improve QOS
10. How is connection established and released in TCP? Explain with neat sketch

UNIT – V

1. Explain the message transfer using Simple Mail Transfer Protocol. & explain the final delivery of email to the end user using POP3 **[APR/MAY-15,16, 17]** Describe the message format and the message transfer and the underlying protocol involved in the working of the electronic mail. **[NOV/DEC-2013], [NOV/DEC-2012, 15,16]**
2. Write short notes on Web services. **[MAY/JUNE-2016] [APR/MAY-2015]**
3. Explain the SNMP protocol in detail. [**MAY/JUNE-2014,15,17, Nov 16]**
4. Write short notes on DNS. **[NOV/DEC-2015,16,MAY/JUNE-2014,17]** Discuss the need for name resolution. Illustrate the domain name hierarchy and the steps in resolution. **[MAY/JUNE-2013], [NOV/DEC-2014]** Explain in detail about name services **[MAY/JUNE-2011]**
5. A Explain with example, the HTTP (World Wide Web). **[NOV/DEC-2013], [NOV/DEC-2012],[MAY/JUNE-2016,17]**
6. Discuss the IP addressing methods **[MAY/JUNE-2014 , APR/MAY-2011]**
7. Draw the architecture of WWW and explain in detail the various blocks
8. Explain e-mail in detail
9. Explain in detail, the HTTP and FTP with neat sketches
10. Explain the SMTP. List out its uses, state strengths and weakness