17CS52

USN
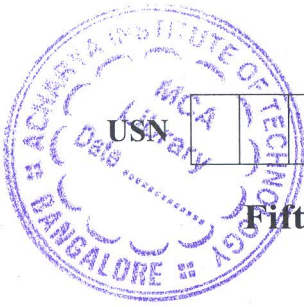
Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Computer Networks

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a. Explain in detail the two network application architectures. **(06 Marks)**
    b. Suppose you wanted to do a transaction from a remote client to a server as fast as possible. Would you use UDP or TCP? Why? Justify your reasons. **(08 Marks)**
    c. What are the different types of transport services provided by the internet? **(06 Marks)**

OR

2   a. With a general format, explain the HTTP request and HTTP response message. **(06 Marks)**
    b. Explain FTP commands and replies. **(08 Marks)**
    c. What are the services provided by DNS? **(06 Marks)**

Module-2

3   a. Draw and explain the FSM for sender side and receiver side of rdt 2.0 protocol. **(06 Marks)**
    b. Explain selective repeat ARQ protocol. **(06 Marks)**
    c. Explain TCP connection management with appropriate sketches (three way handshake, closing). Explain use of SYN, FIN, RST. **(08 Marks)**

OR

4   a. Explain UDP segment structure. **(06 Marks)**
    b. Why does TCP protocol run only in the end systems and not in the intermediate network elements, routers and link layer switches. **(06 Marks)**
    c. What is congestion in network? Explain how TCP handles congestion. **(08 Marks)**

Module-3

5   a. What is routing? With a neat diagram, explain the structure of a router. **(10 Marks)**
    b. Write link state routing algorithm, consider the following network with the indicated link costs. Apply link state routing algorithm to compute the shortest path from u to all other nodes in the network (Refer Fig.Q.5(b)). **(10 Marks)**
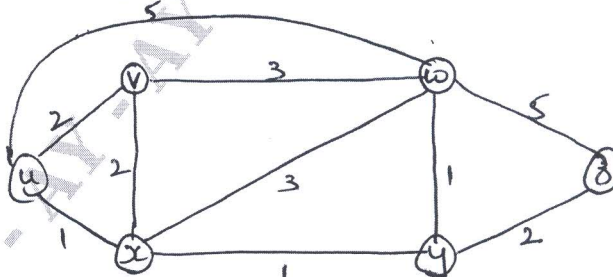

Fig.Q.5(b)

OR

6 a. Write short notes on:
   i)   Broadcast routing
   ii) Multicast routing. **(10 Marks)**
 b. Draw IPV6 datagram format. Explain its fields. **(06 Marks)**
 c. Indicate two key differences between IPV4 and IPV6 format. **(04 Marks)**

Module-4

7 a. With a neat diagram, explain the components of 3G cellular network architecture. **(10 Marks)**
 b. Explain steps of land off for a mobile user. **(10 Marks)**

OR

8 a. Explain the three phases of mobile IP. **(10 Marks)**
 b. With a neat diagram, explain two different types of routing approach to mobile node.
 (10 Marks)

Module-5

9 a. Describe the leaky bucket policing mechanism. Explain in detail how the algorithm is used to achieve traffic policing. **(10 Marks)**
 b. Explain the working of CDN. **(10 Marks)**

OR

10 a. Explain the working of video streaming over HTTP. Explain perfecting, buffer etc and the roles in this process. **(10 Marks)**
 b. Explain these different types of streaming stored video. **(10 Marks)**

* * * * *