CBCS Scheme

USN ☐☐☐☐☐☐☐☐☐☐   **15CS52**

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Computer Networks

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1   a. Compare client server and Perl-to-Peer architecture.   (05 Marks)
    b. Describe HTTP with persistent and non-persistent connections.   (08 Marks)
    c. What are the services provided by DNS?   (03 Marks)

OR

2   a. Demonstrate socket implementation using TCP.   (08 Marks)
    b. Write a note on web caching.   (04 Marks)
    c. Illustrate the basic operation of SMTP with an example.   (04 Marks)

Module-2

3   a. Elaborate the three way handshaking in TCP.   (05 Marks)
    b. Discuss Go-Back N protocol.   (06 Marks)
    c. Explain the connection-oriented multiplexing and de-multiplexing.   (05 Marks)

OR

4   a. State congestion and discuss the cause of congestion   (04 Marks)
    b. With a neat diagram, explain the TCP segment structure.   (08 Marks)
    c. Suppose that two measured sample RTT values are 106 ms and 120 ms. Compute:
        i)   Estimated RTT after each of these sample RTT value is obtained. Assume $\alpha = 0.125$ and
             estimated RTT is 100 msec just before first of the samples obtained.
        ii) Compute DevRTT.
        Assume $\beta = 0.25$ and DevRTT was 5 msec before first of these samples are obtained.
                                                                                (04 Marks)

Module-3

5   a. Write the link-state routing algorithm. Solve the following graph using link-state algorithm
        with source node 'u'.

Fig.Q5(a)   (08 Marks)
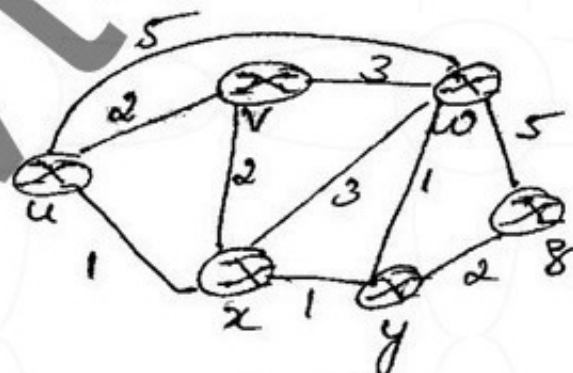   b. What is routing? Explain the structure of a router.   (08 Marks)

15CS52

OR

6 a. Discuss the IPV6 packet format.   (05 Marks)
   b. Elaborate the path attributes in BGP and steps to select the BGP routes.   (05 Marks)
   c. List the broadcast routing algorithms. Explain any one of them.   (06 Marks)

Module-4

7 a. Show the components of GSM 2G cellular network architecture with a diagram.   (07 Marks)
   b. Illustrate the steps involved in mobile IP registration with home agent.   (05 Marks)
   c. Write a note on mobile IP.   (04 Marks)

OR

8 a. Define Handoff. Explain the steps accomplishing a handoff.   (07 Marks)
   b. Bring out the mechanism of direct routing to mobile node in mobility management.

                                                                                         (06 Marks)
   c. Compare the 4G LTE standard to 3G systems.   (03 Marks)

Module-5

9 a. Elaborate the features of streaming stored video.   (03 Marks)
   b. With a neat diagram, explain the CDN operation.   (08 Marks)
   c. Summarize the limitations of Best-effort IP service.   (05 Marks)

OR

10 a. Explain the diffserv internet architecture.   (05 Marks)
   b. Describe the leaky bucket policing mechanism   (06 Marks)
   c. Discuss the round-robin and waited fair queuing scheduling mechanism.   (05 Marks)

* * * * *

CBCS Scheme

USN ☐☐☐☐☐☐☐☐☐☐   **15CS/IS52**

Fifth Semester B.E. Degree Examination, June/July 2018
Computer Networks

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1   a. What are the different types of transport services provided by the internet? (08 Marks)
    b. Compose logical note on proxy–server with suitable diagram. (08 Marks)

OR

2   a. Discuss how files are distributed in peer-to-peer application. (08 Marks)
    b. Design network application using socket programming with UDP. (08 Marks)

Module-2

3   a. Describe the various fields of UDP segment. Explain how Checksum is calculated. (08 Marks)
    b. Design rdt 2.0 protocol. (08 Marks)

OR

4   a. With a neat sketch, explain the TCP segment and its services. (08 Marks)
    b. Explain how connection is established and tear down in TCP. (08 Marks)

Module-3

5   a. Draw IPv6 datagram format, mention the significance of each fields. (08 Marks)
    b. Apply distance –vector algorithm for the following Fig.Q5(b). (08 Marks)
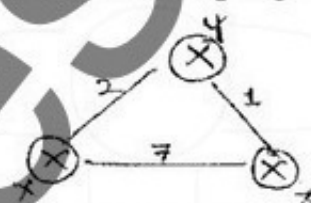

Fig.Q5(b)

OR

6   a. Illustrate Routing Information Protocol (RIP) with suitable diagram. (08 Marks)
    b. Explain the spanning tree algorithm. (08 Marks)

Module-4

7   a. Define cellular network. Give the overview of GSM cellular network architecture. (08 Marks)
    b. Explain the two different types of routing approaches to mobile node. (08 Marks)

OR

8   a. Explain the following concepts of mobile–IP : i) Agent discovery ii) Registration with home agent. (08 Marks)
    b. Illustrate the steps involved when a base station does decide to hand-off a mobile user. (08 Marks)

Module-5

9   a. Brief out three broad categories of multimedia network applications. (08 Marks)
    b. Discuss the followings :   i) Adaptive streaming ii) DASH. (08 Marks)

OR

10 a. With general format, explain the various fields of RTP. (08 Marks)
    b. Explain the working procedure of leaky bucket algorithm. (08 Marks)

* * * * *

CBCS SCHEME

USN | | | | | | | | | | 15CS/IS52

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Computer Networks

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1 a. Explain HTTP messages.   (08 Marks)
   b. Explain web caching with diagram.   (08 Marks)

OR

2 a. Explain FTP with its commands and replies.   (08 Marks)
   b. Explain SMTP.   (04 Marks)
   c. Explain DNS resource record.   (04 Marks)

Module-2

3 a. Explain Sender's view of sequence numbers and its operation in Goback N protocol.
                                                               (08 Marks)
   b. Draw TCP segment structure and explain.   (08 Marks)

OR

4 a. Explain 3 way handshake and closing a TCP connection.   (08 Marks)
   b. Explain the causes and costs of congestion.   (08 Marks)

Module-3

5 a. With diagram explain router architecture.   (08 Marks)
   b. Explain IP fragmentation.   (08 Marks)

OR

6 a. Explain distance vector algorithm.   (08 Marks)
   b. Explain 4 types of hierarchical OSPF routers.   (04 Marks)
   c. Compare link state with distance vector algorithm.   (04 Marks)

Module-4

7 a. Explain components of a cellular network architecture.   (08 Marks)
   b. Explain direct routing of a mobile node.   (08 Marks)

OR

8 a. Explain steps of handoff a mobile user.   (08 Marks)
   b. Explain HLR, VLR, home address, care-of-address.   (08 Marks)

Module-5

9 a. With diagram, explain naïve architecture for audio/video streaming.   (08 Marks)
   b. Explain audio compression in internet.   (08 Marks)

OR

10 a. With diagram, explain interaction between client and server using RTSP.   (08 Marks)
   b. Explain how streaming from streaming server to a media player is done.   (08 Marks)

* * * * *

CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐   15CS52

Fifth Semester B.E. Degree Examination, June/July 2019
Computer Networks

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1 a. Describe in detail the services offered by DNS and explain the DNS message format.
                                                                  (08 Marks)
   b. Illustrate the basic operation of SMTP and FTP.   (08 Marks)

OR

2 a. Explain the persistent and non-persistent connection of HTTP. (08 Marks)
   b. Define a socket. Describe the socket programming using TCP.   (08 Marks)

Module-2

3 a. Draw and explain the FSM for sender and receiver side of rdt 2.1 protocol. (08 Marks)
   b. Elaborate the three-way handshaking procedure used in TCP.   (04 Marks)
   c. Suppose that 2 measured sample RTT values are 106 ms and 120 ms. Compute
       (i) Estimated RTT after each of these sample RTT value is obtained. Assume $\alpha = 0.125$ and estimated RTT is 100 ms just before first of the sample obtained.
       (ii) Compute DevRTT, Assume $\beta = 0.25$ and DevRTT was 5 msec before first of these samples are obtained. (04 Marks)

OR

4 a. With an FSM, explain the three phases of congestion control. (08 Marks)
   b. Write the TCP segment structure and explain its fields.   (04 Marks)
   c. Elaborate the working of Go-Back N protocol.   (04 Marks)

Module-3

5 a. Give the format of IPV6 datagram and explain the fields.   (06 Marks)
   b. What are the message types used in IGMP?   (03 Marks)
   c. Write the link state routing algorithm and apply it to the following graph with source node [Refer Fig.Q5(c)] is 'u'.   (07 Marks)
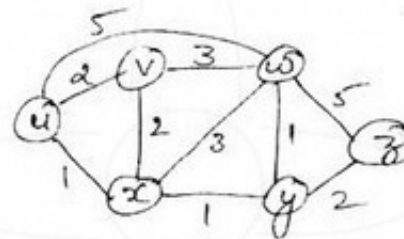

Fig.Q5(c)

OR

6 a. What is routing? Write the structure of a router.   (07 Marks)
   b. List the broadcast routing algorithms? Explain any one of them. (04 Marks)
   c. Describe the intra-AS routing protocols in detail   (05 Marks)

1 of 2

15CS52

Module-4

7 a. Illustrate the two different approaches for routing to a mobile node.   (08 Marks)
   b. With a neat diagram, bring out the steps for mobile node registration to home agent.
                                                                                    (08 Marks)

OR

8 a. Bring out the components of 3G Cellular Network architecture.   (08 Marks)
   b. State handoff? What are the steps involved in accomplishing handoff.   (05 Marks)
   c. Explain the three phases of mobile IP.   (03 Marks)

Module-5

9 a. Bring out the leaky bucket mechanism for traffic policing.   (07 Marks)
   b. Classify the multimedia network applications.   (03 Marks)
   c. Describe the link scheduling mechanisms.   (06 Marks)

OR

10 a. List the categories of streaming stored video. Explain any one of them.   (08 Marks)
    b. Explain the working of CDN.   (08 Marks)

* * * * *