B.E. Sem VII (CBSGS) - ETRX
Computer Communication Networks

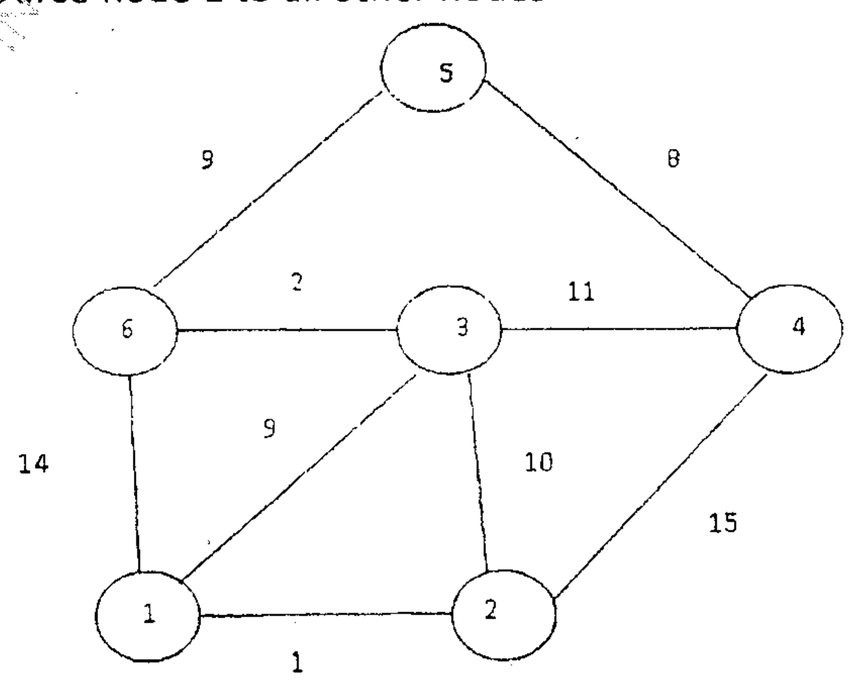
(3 hours)

QP Code : 31377

[Total marks: 80]

N.B: (1) Answer any four questions out of six questions
(2) Question No:1 is compulsory
(3) Assume suitable data if necessary

1. Answer any four questions briefly: (20)
   a) Compare OSI reference model and the TCP/IP reference model
   b) Explain the authentication protocols of PPP
   c) How does Token Bucket algorithm work?
   d) Explain 'bit stuffing' in bit oriented protocols.
   e) Sketch and explain construction of graded index optical fiber
2. a) With a suitable sketch explain the transition/connection phases in Point to Point Protocol (PPP). Also explain the supported sets of protocols in the PPP stack. (10)
   b) Distinguish between Go Back N ARQ and Selective Reject ARQ. (10)
   Sketch the frame flow diagram for Go Back N ARQ and with 3 bit sequence number field and window size of 5, showing the following events:
   i. Frame 0 is sent ; Frame 0 is acknowledged.
   ii. Frames 1 and 2 are sent ;Frames 1 and 2 are acknowledged
   iii. Frames 3,4,5 are sent ; Frame 4 is damaged.
   iv. Timer for frame 5 expires
3. a) Explain the different classes of IP addresses. Identify the class of the following IP addresses and give their default subnet masks: (05)
   1) 227.56.83.0 2) 114.22.43.21 3) 129.14.12
   b) Explain TCP connection establishment and release. (05)
   b) Draw TST switch and three stage space division switch for N=20, n=5 and k=2 and estimate the number of crosspoints required for both cases . (10)
   If the above space division switch is to be made non- blocking, calculate the minimum number of crosspoints required.
4. a) Explain ADSL with respect to spectrum allocation and modulation technique (10)
   b) What are the conditions to be satisfied by a good CRC generator polynomial? (10)
   For P = predetermined divisor = 110101(LSB) and D = K bit data block= 1010001101(LSB), find the CRC .
5. a) Apply Dijkstra's and Bellman Ford algorithm to the given network and find the least cost path between source node 1 to all other nodes (10)



   b) Explain how TCP handles error control and flow control (10)

P.T.O.

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6. Write short note on: (Any TWO) (20)
   a) Compare OSPF and BGP
   b) Berkeley socket
   c) HDLC
   d) CSMA/CD
