B.E.Sixth Semester (Computer Science Engineering) (C.B.S.)
Computer Networks

P. Pages : 2   **NKT/KS/17/7409**

Time : Three Hours   *0681*   Max. Marks : 80

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Notes :   1.   All questions carry marks as indicated.
            2.   Solve Question 1 OR Questions No. 2.
            3.   Solve Question 3 OR Questions No. 4.
            4.   Solve Question 5 OR Questions No. 6.
            5.   Solve Question 7 OR Questions No. 8.
            6.   Solve Question 9 OR Questions No. 10.
            7.   Solve Question 11 OR Questions No. 12.
            8.   Due credit will be given to neatness and adequate dimensions.
            9.   Assume suitable data whenever necessary.
           10.   Illustrate your answers whenever necessary with the help of neat sketches.

1.   a)   Compare OSI reference model with TCP/IP model.   **6**

      b)   What is meant by layered protocol structure? List the various design issues in computer networks.   **7**

<div align="center">**OR**</div>

2.   a)   Explain with example the different service primitives.   **7**

      b)   Differentiate between connection oriented services & connectionless services.   **6**

3.   a)   Write short notes on CRC & solve the following :   **9**
A bit stream 10011101 is transmitted using standard CRC method where the generator polynomial is $x^3 + 1$. Suppose the third bit from left is inverted during transmission show that the error is detected at receiver's end.

      b)   Write and explain the simplex stop & wait protocol.   **5**

<div align="center">**OR**</div>

4.   a)   Explain Go-Back-n protocol. What are the advantages of selective repeat protocol over Go-Back-n protocol.   **7**

      b)   Write short notes on pure ALOHA & slotted ALOHA protocol.   **7**

5.   a)   Explain: **7**
          i)   Traditional Ethernet   ii)   Fast Ethernet

      b)   Write short notes on CSMA protocols.   **6**

<div align="center">**OR**</div>

6.	a)	Explain point to point protocol & LCP.	**6**
	b)	Differentiate between FDMA, CDMA & TDMA.	**7**
7.	a)	With the help of an example explain link state routing.	**6**
	b)	Which type of routing technique can be applied in flooding? Explain how flooding can affect network performance.	**7**

<div align="center">**OR**</div>

8.	a)	Differentiate between Adaptive & Non-Adaptive routing algorithms.	**7**
	b)	Write short notes on optimality principle in routing.	**6**
9.	a)	Explain Leaky bucket algorithm & Token bucket algorithm.	**7**
	b)	For connection establishment in transport layer write the process of three-way handshake protocol.	**6**

<div align="center">**OR**</div>

10.	a)	Write short notes on $ICMP_{V4}$ messages.	**6**
	b)	Explain ARP, RARP with suitable example.	**7**
11.	a)	What is the importance to maintain quality of service in networking? What are the different techniques to improve Quality of service?	**7**
	b)	How TCP is different from UDP? Why both are required in transport layer?	**7**

<div align="center">**OR**</div>

12. Write short on **any three.**   **14**

a)	Crash Recovery	b)	Bluetooth
c)	ISDN	d)	ATM Layers.

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