

Total No. of Questions : 8] [Total No. of Printed Pages : 2

Roll No.

IT-503(N)

B. E. (Fifth Semester) EXAMINATION, June, 2011

(Information Technology Engg. Branch)

COMPUTER NETWORKS

[IT-503(N)]

Time : Three Hours.

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any five questions. All questions carry equal marks.

1. (a) What is the principal difference between connectionless communication and connection oriented communication ? Give an example of each. 10
(b) Explain why the ISO-OSI model of computer network is layered. How is it different from TCP/IP model ? 10
2. (a) Explain the typical characteristics of a LAN in terms of network type, bit rate, geographic extent, delay bandwidth product, addressing and cost. 10
(b) Explain briefly the following : 10
 - (i) ARPANET
 - (ii) X.25
3. (a) Explain the meaning of the term 'Piggyback acknowledgement'. Sketch a typical frame sequence to illustrate how Piggyback acknowledgements are used in the HDLC protocol ? 10

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- (b) Calculate the frame for the sequence 10110110101
with the $G(x) = X^4 + X + 1$. 10
4. (a) Explain carrier sense multiple access protocols and
give their best channel utilization. 10
- (b) Show that for pure ALOHA, the maximum throughput
is $1/2 e$ and occur at $G = 0.5$. 10
5. (a) Explain with diagram the architecture of wireless
LAN. 10
- (b) Compare the following : 5 each
- (i) Adaptive vs Non-adaptive routing
- (ii) Centralized, Isolated and Distributed routing
6. (a) Write a short note on Bellman-Ford algorithm. 10
- (b) What is congestion control ? Explain leaky bucket
mechanism for controlling the congestion in the
network. 10
7. (a) Explain connection management issues at transport
layer. 10
- (b) Why does UDP exist ? Would it not have been enough
to just let user processes send raw IP packets. 5
- (c) What is Hub ? Explain various types of hubs ? How
hub is different from switch ? 5
8. Write short notes on any *four* of the following : 5 each
- (a) IPconfig command
- (b) IPV₄
- (c) FDDI
- (d) WIMAX
- (e) Stop and Wait protocol