

CS/B.Tech/IT/Even/Sem-6th/IT-602/2015



WEST BENGAL UNIVERSITY OF TECHNOLOGY

IT-602

COMPUTER NETWORKING

Time Allotted: 3 Hours

Full Marks: 70

*The questions are of equal value.
The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.*

GROUP A
(Multiple Choice Type Questions)

1. Answer any ten questions.

10×1 = 10

(i) Frame Relay operates in the _____

- (A) Physical layer
(B) Data link layer
(C) Physical and data link layers
(D) Physical, data link and network layer

(ii) A device called a(n) _____, allows frames from an ATM network to be transmitted across a Frame Relay network.

- (A) LMI (B) VOFR
(C) FRAD (D) DLCI

(iii) _____ separates the AMPS voice channel

- (A) CDMA (B) TDMA
(C) FDMA (D) Both (B) and (C)

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(iv) A 10-station Ethernet LAN uses a _____ port bridge if the effective average data rate for each station is 2 Mbps.

- (A) 1 (B) 2
(C) 5 (D) 10

(v) _____ is the access protocol used by traditional Ethernet

- (A) CSMA (B) CSMA/CD
(C) CSMA/CA (D) Token ring

(vi) In the p -persistent approach, when a station finds an idle line, it _____

- (A) waits 1s before sending (B) sends with probability $1-p$
(C) sends with probability p (D) sends immediately

(vii) When data and acknowledgment are sent on the same frame, this is called

- (A) piggybacking (B) backpacking
(C) piggypacking (D) information

(viii) The bit rate always equals the baud rate in _____ type of the signal

- (A) FSK (B) QAM
(C) 4-PSK (D) None of the above

(ix) A 56K modem can download at a rate _____ Kbps and upload at a rate of _____ Kbps

- (A) 33.6; 33.6 (B) 33.6; 56.6
(C) 56.6; 33.6 (D) 56.6; 56.6

(x) The main function of transport layer is

- (A) Node-to-node delivery
(B) Process to process delivery
(C) Synchronization
(D) Updating and maintenance of routing tables

(xi) The _____ is a device that connects n inputs to m output

- (A) Crosspoint (B) Crossbar
(C) Modem (D) RAM

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GROUP B
(Short Answer Type Questions)

Answer any three questions.

3/3 × 5 = 15

2. Differentiate between Cable modem and Dial-up modems. What is ADSL modem? Explain its functionalities. 2+1+2
3. What is ALOHA? Explain ALOHA with flowchart. 1+4
4. Explain digital signature in brief. 3
5. (a) What are the differences between packet switching and circuit switching? 3
- (b) Explain briefly different circuit switching with examples. 3
6. Explain the 802.3 MAC frame format. What is FDDI? 3+2

GROUP C
(Long Answer Type Questions)

Answer any three questions.

3 × 15 = 45

7. (a) What are the drawbacks of token ring topology? 2
- (b) A signal is sampled. Each sample represents one of four levels. How many bits are needed to represent each sample? If the sampling rate is 8000 samples per second, what is the bit rate? 2+1
- (c) Differentiate between Link state and Distance Vector Routing algorithm 3
- (d) If the baud rate is 400 for a 4-PSK signal, what is bit rate? 2
- (e) In which case and why message switching is better than circuit switching? 3
- (f) How does NRZ - 1 differ from NRZ - L? 2
8. (a) What are the advantages of optical fiber over twisted-pair and coaxial cable? 3
- (b) Give an example for each class of unguided media. 3
- (c) Why DNS is required? 3

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- (d) What is the disadvantage of ADSL technology? 3
- (e) Explain S-Frame of HDLC frame format in Data Link Layer. 3
9. (a) What is the function of ICMP? 2
- (b) What is the difference between dynamic routing and static routing? 3
- (c) A router has the following RIP routing table: 7

Net 1	4	B
Net 2	2	C
Net 3	1	F
Net 4	5	G

What would be the contents of the table if the router received the following RIP message from router C?

Net 1	2
Net 2	1
Net 3	3
Net 4	7

- (d) Explain the methods of token bucket algorithm. 3
- (a) What is the advantage of Asymmetric key algorithm over symmetric key algorithm? 3
- (b) What is Firewall? How does Firewall resolve the security issues? 4
- (c) Host A sends a datagram to host B. Host B never receives the datagram, and host A never receives notification of failure. Give two different explanations of what might have happened. 3
- (d) What are the advantages of Go-Back-N ARQ over Stop-and-Wait ARQ? 3
- (e) What are the difference between TCP and UDP? 3
- Write short notes on any three of the following:- 3 × 5
- (a) CHAP
- (b) Ethernet MAC frame format
- (c) HTTP
- (d) ALOHA
- (e) BGP
- (f) Bluetooth

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