

TEST #2
SOUTHERN METHODIST UNIVERSITY — EE 8301
NATIONAL TECHNOLOGICAL UNIVERSITY — ST 750-N
March 24, 1999

CERTIFICATION OF TESTING ENVIRONMENT (To be signed after taking test):

ALL STUDENTS:

I understand that this test is intended to be taken in a 55-minute period without my prior knowledge as to content and without collaboration with other persons. On my honor, I testify that I have taken it within that context and that I will not discuss its contents with anyone other than the instructor and other students who have already taken it.

Signed _____
(Must be signed by student to be counted)

FOR OFF-CAMPUS SITES ONLY:

I distributed and collected these test materials on a 55-minute interval on

(date).

Signed _____
(Must be signed by site coordinator to be counted)

Name_____

Location_____

SOUTHERN METHODIST UNIVERSITY — EE 8301
NATIONAL TECHNOLOGICAL UNIVERSITY — ST750-N
TEST #2 — CLOSED BOOK, CLOSED NOTES*
March 24, 1999

Instructions: The "Location" (above) is where you want your graded test returned. For off-campus sites, home address is recommended. *For multiple-choice questions, circle the letter in front of the one-best answer. The CERTIFICATION OF TESTING ENVIRONMENT on page 1 must be signed to be counted.

- 8% 1. In 30 words or less, give at least two reasons why frame relay has been such an outstanding success in the 1990s, comparing it with X.25

- 8% 2. In 30 words or less, explain two differences between a classical multiplexer and a statistical multiplexer.

- 8% 3. Two HDLC terminals, "X" and "Y", are connected via a point-to-point digital circuit and are operating in the BA Class. "X" sends the command shown. Assume that "Y" has 3 frames of data to send, but the window is only two. Using "International Notation" including content of the A field, show the exchanges in both directions, up to the point where "Y" has sent all three frames and "X" has acknowledged all three. HDLC Option 8 is in effect. Modulo 8 counters are in use. Show your answer with "Y" sending its first information frame while it is being polled by "X."

X: |Y,I4,6P|

Y:

- 4% 4. Which of the following uses Layer 1 switching?
- Bus switching
 - Receive & forward switching
 - Packet switching
 - Frame relay
 - None of the above
- 4% 5. Broadcast networking is equivalent to
- Layer 1 switching.
 - Layer 2 switching.
 - Layer 3 switching.
 - Layer 4 switching.
 - None of the above
- 4% 6. TRIB means
- avoid window delay.
 - a technique in which two devices are programmed to deceive each other.
 - a technique in which two devices are programmed to deceive other devices.
 - data payload throughput rate.
 - a spoofing technique to improve throughput.
- 4% 7. Which of the following best described multiplexers?
- Physically combine multiple channels, but there is no physical splitting elsewhere
 - Splitting is usually handled by software
 - What goes into a network comes out with the same bit rate and protocol on the other side
 - No spoofing is allowed
 - Data transmission cannot be isochronous
- 4% 8. An X.25 logical channel is that portion of the virtual circuit that exists in the
- access line.
 - virtual path.
 - trunk.
 - node.
 - transmission medium.
- 4% 9. Data awaiting a routing decision, analysis, or header is said to be experiencing what type of delay?
- Window
 - Processing
 - Transmission
 - Propagatoin
 - Access
- 4% 10. Which of the following is NOT an application of spoofing?
- Improving throughput using early acknowledgements of data
 - Reducing network capacity requirements by not sending non-data
 - Improving turnaround in a multiplexer system by early acks
 - Reducing network requirements by not sending polls across network
 - None of the above (All are applications)

- 4% 11. Transmission delay is
- the same as window delay.
 - the same as propagation delay.
 - the same as the duty cycle.
 - the sum of the propagation delay and the window delay.
 - None of the above
- 4% 12. The value of P(S) is
- the number of information frames sent in an access line.
 - the number of data packets sent in an access line.
 - the number of data packets sent in a logical channel.
 - the number of frames sent in a logical channel.
 - None of the above
- 4% 13. An eye pattern is a graph of
- current versus time.
 - current versus voltage.
 - voltage versus time.
 - bits versus time.
 - None of the above
- 4% 14. A frame relay message can be discarded UNLESS
- the frame is not transmitted.
 - the frame contains no errors.
 - the DE bit is set to 0.
 - the frame transmit buffer is full.
 - None of the above
- 4% 15. Frame Relay services from public carriers are
- datagram services.
 - PVCs operating as in a private network.
 - PVCs operating as in a public network.
 - SVCs operating as in a private network.
 - SVCs operating as in a public network.
- 4% 16. The DE bit in frame relay acts as a form of
- line control.
 - error control.
 - transparency control.
 - congestion control.
 - remote control.
- 4% 17. ISDN exists
- in access lines.
 - in trunks.
 - in access lines and trunks.
 - in access lines and SS7 circuits.
 - None of the above

POOL Questions:

The following pool may be used to answer the next several questions. You should not need to use a pool answer more than once. Write the symbol next to the best answer in the blank in front of the question.

A	Bearer channel	Q	LCN	FF	DLCI
B	Datagram	R	DM	GG	Protocol
C	Sliding window	S	Primitive	HH	Flag
D	RR	T	Specification	JJ	REJ
E	Transmission delay	V	X.2	KK	Eye pattern
F	Symmetrical	W	Poll bit	LL	L field
G	Buffer delay	X	Q.931	MM	Constellation pattern
H	REJ	Y	SABM	NN	P(S)
J	Modem delay	Z	Network latency	PP	FRMR
K	Layer 4	AA	D channel	QQ	N(S)
L	Window delay	BB	I.430	RR	D-bit confirmation
M	DE	CC	No response	SS	PR)
N	Architecture	DD	None	TT	UA
P	Processing delay	EE	FCS	VV	N(R)

18. ____ X.25 equivalent of DLCI.
19. ____ Frame relay equivalent of a poll bit.
20. ____ A technique for achieving data transparency.
21. ____ An X.25 capability that is really part of Layer 4.
22. ____ A characteristic of X.75.
23. ____ This word best describes X.96.
24. ____ This is a good example of out-slot signaling.
25. ____ This is the HDLC response to an illegal command or illegal procedure.
26. ____ This is the HDLC response to a poll containing a bit error.
27. ____ Transit delay minus access line delay.