

B.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Seventh Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

ECE129: High Speed Networks

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. At the data link layer, Frame Relay uses a protocol that supports ____ control.
 - a) Flow
 - b) error
 - c) either (a) or (b)
 - d) neither (a) nor (b)
2. In ATM, ____ is for conventional packet switching (virtual-circuit approach or datagram approach).
 - a) AAL1
 - b) AAL2
 - c) AAL3/4
 - d) AAL5
3. Which of the following is not one of the assumptions of an M/M/1 model?
 - a) Arrivals are independent of preceding arrivals but the arrival rate does not change over time
 - b) Arrivals are served on a last-in, first-served basis
 - c) Service times follow the negative exponential probability distribution.
 - d) Arrivals follow the Poisson distribution and come from an infinite population
4. In Frame relay, the ----- is the maximum number of bits in excess of Bc that a user can send during a predefined time
 - a) Access rate
 - b) Committed information rate
 - c) Excess burst size
 - d) committed burst size
5. TCP uses _____ to check the safe and sound arrival of data.
 - a) an acknowledgement mechanism
 - b) out of band signaling
 - c) the services of another protocol
 - d) In band signalling

6. Karn's algorithm
- a) is a way to compute the flow control window of very slow senders
 - b) is a way to combat the silly window syndrome
 - c) is a way to avoid ambiguity in RTT measurements when packets are retransmitted
 - d) Controls congestion
7. In _____ queuing, the packets are assigned to different classes and admitted to different queues. The queues however are weighted based on the priority of the queue. The system processes packets in each queue in a round robin fashion with the number of packets selected from each queue based on the corresponding weight.
- a) FIFO
 - b) Priority
 - c) Weighted Fair
 - d) None of the above
8. _____ is a class – based QoS model designed for IP
- a) Integrated service
 - b) Differentiated Services
 - c) Connection less
 - d) Connection oriented
9. A Commonly used protocol to support quality of service (QoS) is
- a) Address resolution Protocol
 - b) RSVP
 - c) RTCP
 - d) RTP
10. _____ is a promising effort to provide the kind of traffic management and connection oriented QoS support, to speed up IP packet forwarding process and to retain the flexibility of an IP based networking approach.
- a) Integrated service
 - b) Differentiated service
 - c) Multiprotocol label switching
 - d) None of the above

PART B (10 x 2 = 20 Marks)

11. What is the role of DE bit in frame relay?
12. What are the two types of sublayer used in ATM adaptation layer?
13. What are the steady state performance measures to be determined in queuing models?
14. What is the difference between committed burst size (Bc) and Excess burst size (Be).
15. Why is retransmission strategy essential in TCP?
16. What are the types of retransmit policy.
17. Define global synchronization.
18. Distinguish between inelastic and elastic traffic?
19. What are the reservations attributes and styles in RSVP.
20. Define Forwarding equivalence class (FEC).

PART C (5 x 14 = 70 Marks)

21. a) Explain the Frame relay architecture & compare it with X.25.
(OR)
b) (i) Explain the ATM cell with a suitable diagram and explain Generic Flow Control and Header error control. (8)
(ii) Explain various ATM services. (6)
22. a) At an ATM machine in a supermarket, the average length of a transaction is 2 minutes, and on average, customers arrive to use the machine once every 5 minutes, How long is the average time that a person must spend waiting and using the machine? What is the 90th percentile of residence time? On average, how many people are waiting to use the machine? Assume M/M/1.
(OR)
b) (i) Explain the effects of congestion. (6)
(ii) Explain the congestion control mechanisms in packet switching networks. (8)
23. a) (i) Explain TCP flow & congestion control. (10)
(ii) Discuss the Retransmissions Timer management techniques. (4)
(OR)
b) Explain the five important window management techniques.
24. a) Explain, with neat diagram, the significance, components, services and the architecture of Integrated services.
(OR)
b) Explain the Random Early Detection algorithm.
25. a) Discuss in detail Data flow, operations and protocol mechanism of RSVP.
(OR)
b) Explain the following:
(i) RTP (7)
(ii) MPLS (7)
