

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2010

Sixth Semester

INFORMATION TECHNOLOGY

U07IT602: High Performance Networks

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. In ATM protocol reference model _____ plane is used for information transfer along with associated controls.
A) Control C) User B) Management D) Adaptation
2. In high speed Local Area Networks, CSMA/polling access method is used in _____.
A) Fast Ethernet C) Fibre channel B) Gigabit Ethernet D) Wireless LAN
3. M/M/1 refers to _____
A) Single server queuing model with exponential service times
B) Single server queuing model with general service times
C) Single server queuing model with constant service times
D) Multi server queuing model with constant service times
4. _____ is a control packet generated at a congested node and transmitted back to a source node
A) Choke packet B) ARP C) RTP packet D) RARP
5. The char of an ATM flow over an ATM connection are captured in a _____
A) Call delay variation tolerance B) Conformance definition
C) Connection traffic descriptor D) Peak to peak call delay variation
6. Token bucket algorithm is used for _____
A) Capacity allocation B) Traffic shaping C) Feedback mechanism D) tagging
7. _____ determines the order in which queued packets are transmitted and the selection of packets for discard, if necessary.
A) Classifier B) Router selector C) Management agent D) Packet scheduler
8. The services provided across a differentiated service domain are defined in a _____ which is a contract between customer and a service provider.
A) Traffic level agreement B) Per hop behavior C) Service level agreement D) Metering

9. The _____ style specifies a distinct reservation for each sender and provides an explicit list of senders
- A) Wild-card filter B) First in first out C) Fixed filter D) Shared explicit
10. The protocol which runs on top of UDP for real time transport is _____
- A) TCP B) RTP C) FTP D) SMTP

PART B (10 x 2 = 20 Marks)

11. State any two advantages and disadvantages of packet switching relative to circuit switching
12. Mention the applications using Constant bit rate service
13. Define Little's formula
14. Differentiate Implicit and Explicit congestion signaling
15. Mention the retransmission strategies used in TCP
16. What is the need for Usage Parameter Control?
17. What are the Key elements of the guaranteed service?
18. List the design goals of Random Early Detection.
19. Draw the protocol architecture of RTP.
20. What is Soft state in RSVP?

PART C (5 x 14 = 70 Marks)

21. (a) Explain Frame relay architecture with necessary diagrams

(OR)

(b) (i) Consider a packet-switching network of N nodes, connected by the following topologies.

Star: One central node with no attached station : all other nodes attach to the central node

Loop: Each node connects to two other nodes to form a closed loop.

Fully Connected: Each node is directly connected to all other nodes. For each case, give the average number of hops between stations.

(ii) Explain ATM header format.

22. (a) Messages of three different sizes flow through a message switch. Seventy percent of the messages take 1 ms to serve, Twenty percent of the messages take 3 ms to serve, Ten percent of the messages take 10 ms to serve. Calculate the average time spent in the switch, and the average number of messages in the switch, when messages arrive at an average rate of

(i) one per 3 ms (ii) one per 4 ms (iii) one per 5 ms

(OR)

- (b) (i) Explain congestion signaling approaches
- (ii) Explain how Congestion is controlled in packet switching networks.

23. (a) Explain the Window Management techniques of TCP.

(OR)

- (b) Explain resource Management using virtual paths in ATM

24. (a) Explain Integrated Service Architecture.

(OR)

- (b) (i) Explain RED algorithm with an example
- (ii) Explain the traffic conditioning function of Differentiated Services.

25. (a) With an example explain the three reservation styles of RSVP.

(OR)

- (b) Explain the operation of Multi protocol Label Switching
