



KINGS

COLLEGE OF ENGINEERING
PUNALKULAM.



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING
QUESTION BANK**

SUBJECT CODE : EC1008 SEM / YEAR : VII / IV

SUBJECT NAME : HIGH SPEED NETWORKS

UNIT - I

HIGH SPEED NETWORKS (Introduction)

PART- A (2 marks)

1. What are the data link control functions provided by LAPF?
2. What are the main features of ATM?
3. What is virtual path identifier and Virtual connection identifier?
4. What is ATM ?
5. List the levels of fiber channel and the functions of each level?
6. What is meant by SAR and CS?
7. What is the difference between AAL3/4 and AAL3/5.
8. Draw the diagram for ATM layers?
9. Give the data rates for frame relay and X.25?
10. Define NIC and Ethernet.

PART - B

1. Explains the Frame relay architecture & compare it with x.25. **(16)**
2. a. Explain the ATM cell with a suitable diagram and explain Generic Flow Control and Header error control. **(8)**

- b. Explain various ATM services. (8)
3. a. Discuss and compare the CPCS-PDU & SAR-PDU of AAL 3/4 & AAL 5 (8)
b. Explain the architecture of AAL 1 (8)
4. Explain the architecture of 802.11 (16)
5. Explain the following:
a. Classical Ethernet (8)
b. IEEE 802.3 medium options at 10 Mbps (8)
- 6 a. Fast Ethernet (8)
b. gigabit Ethernet (8)
c. Explain Fiber channel Protocol architecture. (8)

UNIT- II

CONGESTION & TRAFFIC MANAGEMENT

PART- A (2 marks)

1. What is the role of DE lint in Frame relay?
2. How does frame relay report congestion?
3. Write Little's formula.
4. Define Traffic intensity or utilization factor and QOS.
5. What is the difference between committed burst size (B_c) and Excess burst size (B_e).
6. Define terms Router, Bridge and Gateway.
7. What is Bluetooth?
8. Distinguish between Poisson and Exponential formulae.
9. How we calculate the percentile of packets transfer at a time in traffic management technique.
- 10 Define Arrival rate and service rate.

PART - B

1. Explain the single- server and multi server queering models. **(16)**
2. 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. **(16)**
3. Consider a frame relay node that is handling a Poisson stream of incoming frames to be transmitted on a particular 1 – Mbps outgoing link. The stream consists of two types of frames. Both types of frames have the same exponential distribution of frame length with a mean of 1000 bits.
- a. Assume that priorities are not used. The combined arrival rate of frame of both types is 800 frames/second. What is the mean residence time (T_r) for all frames?
- b. Now assume that the two types are assigned different priorities, with the arrival rate of type 1 of 200 frames/second and the arrival rate of type 2 of 600 frames/second. Calculate the mean residence time for type 1, type2, and overall.
- c. Repeat (b) for $\lambda_1 = \lambda_2 = 400$ frames/second.
- d. Repeat (b) for $\lambda_1 = 600$ frames/second and $\lambda_2 = 200$ frames/second. **(16)**
4. Messages arrive at a switching center for a particular outgoing communications line in a poisson manner with a mean arrival rate of 180 messages per hour. Message length is distributed exponentially with a mean length of 14,400 characters. Line speed is 9600 bps.
- a. What is the mean waiting time in the switching center? **(6)**
- b. How many messages will be waiting in the switching center for transmission on the average? **(10)**
5. a.Explain the effects of congestion. **(8)**
 b. Explain the congestion control mechanisms in networks. **(8)**

UNIT – III**TCP AND ATM CONGESTION CONTROL****PART- A (2 marks)**

1. Define the relationship between through put and TCP window size W.
2. Why is retransmission strategy essential in TCP?
3. What are the types of retransmit policy?
4. Why congestion control in a TCP/IP-based internet is complex.
5. Define cell delay variation.
6. Define CBR & ABR.
7. What are the advantages of sliding window protocol

PART - B

- 1 a. Explain TCP flow & congestion control. **(10)**
 - b.Explain the Retransmissions Timer management techniques. **(6)**
2. Explain the five important window management techniques. **(16)**
3. a Explain the congestion control mechanism in ATM networks carrying TCP traffic. **(10)**
 - b.Explain the ATM traffic control **(6)**
4. a. What are the requirements for ATM traffic and congestion control? **(10)**
 - b. Explain the ATM traffic – related attributes. **(6)**
- 5 a.. Explain in detail ABR traffic management. **(8)**
 - b. Explain in detail GFR traffic management. **(8)**

UNIT- IV

INTEGRATED AND DIFFERENTIATED SERVICES

PART- A (2 marks)

1. What are the requirements for inelastic traffic?
2. State the drawbacks of FIFO queering discipline.?
3. What is global synchronization?
4. Distinguish between inelastic and elastic traffic.?
5. Define the format of DS field.?

PART - B

1. Explain the block diagram for Integrated Services Architecture. and give details about components **(16)**
- 2.a. Explain the services offered by ISA **(8)**
 b. Define Differentiated services. **(8)**
3. Explain the various queering disciplines in ISA. **(16)**
4. Explain the RED algorithm. **(16)**
5. Explain the various types of Traffic. **(16)**

UNIT-V

PROTOCOLS FOR QOS SUPPORT

PART- A (2 marks)

1. What are the reservations attributes and styles in RSVP.
2. Define Forwarding equivalence class (FEC).
3. Define MPLS label format in RSVP.
4. Compare hop – lug – hop routing and explicit routing.
5. Define the format of RTP header.

PART - B

- 1.a. Explain the characteristics of RSVP & the types of data flow. **(8)**
 - b. Explain the RSVP operation and protocol mechanisms. **(8)**
2. Explain the operation of multi protocol label switching. **(16)**
- 3 a. Explain the RTP protocol architecture. **(8)**
 - b. Explain the RTP data transfer protocol. **(8)**
4. Explain the MPLS characteristics and advantages. **(16)**

***** ALL THE BEST*****