KUMARAGURU
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B.E DEGREE EXAMINATIONS: APRIL 2018

(Regulation 2014)

Eighth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U14ECTE31**:** High Speed Networks

COURSE OUTCOMES

CO1: Recognize various types of High speed networks.

CO2: Analyze the congestion control techniques for ATM and TCP networks.

CO3: Identify the traffic management schemes.

CO4: Discuss Integrated and Differentiated services.

CO5: Assess different protocols to achieve the required QOS.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Matching the following   CO1   [K_2]

List I	List II
A. Data link layer	i. Frame Relay deploys physical layer
B.SONET	ii. Frame relay has error detection
C. FRAD	iii. Frame Relay does not provide flow or error control
D. Upper Level Protocol	iv. Assembles and disassembles the frames

	A	B	C	D
a)	ii	i	iv	iii
b)	iii	iv	ii	i
c)	ii	iv	iii	i
d)	iii	i	ii	iv

2. TCP groups a number of bytes together into a packet called   CO2   [K_2]

     a)   Packet   b)   Buffer

     c)   Segment   d)   Stack

3.   Which of these statements are true: CO2 [K$_2$]

1. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. whereas in Selective Repeat window, tries to send packet that have lost or corrupted.

2. Discarding policy is mainly done by switch.

3. Backpressure technique can be applied only to congestion networks

4. Closed-Loop control mechanism try to remove after congestion occurs.

a)   1,3   b)   1,4

c)   1,2   d)   2,3

4.   .... layer in the TCP/IP stack is equivalent to the Transport layer of the OSI model?   CO2 [K$_2$]

a)   Application   b)   Host-to-Host

c)   Internet   d)   Network Access

5.   Assertion (A): In Karn's, the retransmission ambiguity problem occurs when a sender has   CO3 [K$_2$] retransmitted a packet and receives an acknowledgement (ACK) for the data.

Reason (R): A set that makes stationary or mobile wireless station and also have optional central base station is known as basic service set.

a)   Both A and R are Individually true and R is the correct explanation of A   b)   Both A and R are Individually true but R is not the correct explanation of A

c)   A is true but R is false   d)   A is false but R is true

6.   The maximum acceptable amount of time for restoring a network or application and   CO3 [K$_2$] regaining access to data after an unplanned disruption.

a)   Flow Control   b)   KARN's Algorithm

c)   Congestion Avoidance   d)   Recovery Time Objective

7.   Differentiated Services has the following components in order of   CO4 [K$_2$]

1.Congestion Avoidance

2. Packet classification and Marking

3. Congestion Management

4. Traffic Conditioning

a)   2-3-4-1   b)   1-3-2-4

c)   3-4-2-1   d)   4-1-3-2

8.   In Integrated Services, when a source makes a reservation, it needs to define a   CO4 [K$_2$]

a)   Error Solution   b)   Flow Specification

c)   Timer   d)   Flow Control

9. Assertion (A): An RTP header has a minimum size of 12 bytes   CO5 [K₂]

Reason (R): SRTP defines a profile of RTP that provides cryptographic services for the

transfer of payload data.

a) Both A and R are Individually true   b) Both A and R are Individually true but R is
and R is the correct explanation of A   not the correct explanation of A

c) A is true but R is false   d) A is false but R is true

10. RTP is used to   CO5 [K₂]

a) carry the media stream   b) monitor transmission statistics of streams

c) monitor quality of service of streams   d) unprivileged UDP ports

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11.	Differentiate between Virtual Channel Identifier (VCI) and Virtual Path Identifier (VPI).	CO1	[K₂]
12.	List out the various ATM services.	CO1	[K₁]
13.	Define CIR.	CO2	[K₁]
14.	Name the IEEE 802.11 Services.	CO2	[K₁]
15.	Compare the various functions of frame relay congestion control techniques.	CO2	[K₃]
16.	Relate FIFO with WFQ.	CO3	[K₁]
17.	List out an example of PS and BRFQ.	CO3	[K₁]
18.	Write the main two key features of Integrated Services.	CO4	[K₂]
19.	Define Label Stacking.	CO5	[K₁]
20.	Interpret RTP header format.	CO5	[K₂]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)

(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. Describe in detail about frame relay protocol architecture with neat diagram.   CO1 [K₂]

22. In a health clinic, the average rate of arrival of patients is 12 patients per hour. On an   CO2 [K₄]
average, a doctor can serve patients at the rate of one patient every four minutes.
Assume, the arrival of patients follows a Poisson distribution and service to patients
follows an exponential distribution. Find the average number of patients in the waiting
line and in the clinic. Find the average waiting time in the waiting line or in the queue
and also the average waiting time in the clinic. Assume M/M/1 model.

23. Describe in detail about TCP credit allocation mechanism and retransmission strategy. CO3 [K$_2$]

24. Discuss on performance of TCP over ATM. CO3 [K$_2$]

25. Compare and Contrast on Integrated and Differentiated Services. CO4 [K$_4$]

26. Explain the goals and characteristics of RSVP in details. CO5 [K$_2$]

27. Discuss RTP Control Protocol and illustrate how the last two fields in RTCP SR or RR receiver report block can be used to calculate round-trip propagation time. CO5 [K$_2$]

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