KUMARAGURU
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B.E DEGREE EXAMINATIONS: APRIL 2018
(Regulation 2014)

Eighth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U14ECTE47 : Telecommunication Switching Networks

COURSE OUTCOMES

CO1: Describe different multiplexing techniques.

CO2: Express the concepts of Digital Switching.

CO3: Review the performance analysis of network traffic.

CO4: Outline the ISDN architecture and Digital Loop Carrier Systems.

CO5: Analyze the Characteristics of a network.

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Match the List I with List II   CO1 [K_1]

List I	List II
A. FDM	i. low speed data transfer
B. TDM	ii. high speed data transfer
C. PDH	iii. higher latency
D. SDH	iv. lower latency

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

2. SONET don't have   CO1   [K_1]

   a) High speed   b) Reliability

   c) Security   d) Low cost

3. Space Division Switching is $\qquad$ CO2 [K$_2$]

1. It is instantaneous.

2. No need cross points.

3. Need cross points.

4. Creates delays

a)	1,3	b)	1,4
c)	1,2	d)	2,3

4. There are _____ kinds of network points in signaling points. CO2 [K$_2$]

a)	2	b)	3
c)	1	d)	None of the above

5. Assertion (A): A telecommunication network requires accurate synchronization for correct CO3 [K$_1$] operation.

Reason (R): For example, if switches don't operate with the same clock rates then slips will occur and degrade performance.

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. A Jitter buffer can mitigate the effects of jitter, either in the network on a ____ CO3 [K$_1$]

a)	Switch	b)	Router
c)	Computer	d)	Any of the above

7. PCM System is composed of the following sequences CO4 [K$_1$]

1. Quantizer   2. Encoder   3. PAM Sampler

a)	2-3-1	b)	1-3-2
c)	3-1-2	d)	3-2-1

8. Asymmetric DSL is used in the line code of CO4 [K$_2$]

a)	DMT	b)	2B1Q
c)	T-1line	d)	None

9. Assertion (A): The delay systems are analyzed using queuing theory. CO5 [K$_1$]

Reason (R): GOS is used to measure the performance of the loss system.

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

10.	Over 20 minutes observation, 40 Subscribers initiate calls. Total duration of all call is 80 minutes. Calculate load offered to the network		CO5 [K$_2$]

a) 0.1 E   b) 2 E

c) 4 E   d) 8 E

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11.	Write down the concept of Frequency Justification.	CO1	[K$_2$]
12.	Draw the block diagram of SONET system.	CO1	[K$_1$]
13.	What is BORSCHT?	CO2	[K$_1$]
14.	Define Digital Switching.	CO2	[K$_1$]
15.	Define slip rate.	CO3	[K$_1$]
16.	What is PLL?	CO3	[K$_2$]
17.	Differentiate ADSL and VDSL.	CO4	[K$_3$]
18.	What is meant by S bus?	CO4	[K$_1$]
19.	Define traffic intensity.	CO5	[K$_1$]
20.	List out the applications of queuing theory.	CO5	[K$_1$]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21.	Describe DS3 Payload Mapping and E4 Payload Mapping		CO1	[K$_2$]
22.	(i) Discuss Lee's method of Blocking Probability Analysis.	(7)	CO1	[K$_2$]
	(ii) Explain about folded four wire switch matrix.	(7)		
23.	Explain in detail about No.4 ESS Toll Switch.		CO2	[K$_2$]
24.	(i) Explain the major sources that cause clock instability in digital networks.	(8)	CO3	[K$_6$]
	(ii) With suitable block diagram explain the function of jitter removing regenerative repeater.	(6)		

25. (i) Explain the working operation of M12 multiplexer. (7) CO3 [K$_2$]

(ii) Discuss the principle of network control and management. (7)

26. Describe the following:

(i) ISDN U Interface (7) CO4 [K$_2$]

(ii) PCM Modems (7)

27. Explain in detail about Delay system. CO5 [K$_2$]

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