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RM-7733

B. E. IV (Sem. VIII) (ECC) Examination

May / June – 2010

Telecommunication Switching Systems & Networks (Elective - II)

Time : 3 Hours] [Total Marks : **100**

Instruction :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 4 (Sem. 8) (ECC)**

Name of the Subject :

☛ **Telecommu. Switc. Syst. & Networks (Elective - 2)**

☛Subject Code No. : **7 7 3 3** ☛Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Assume suitable data wherever **necessary**.
(3) The acronyms carry their usual meaning.
(4) Figures to **right** indicate full marks.
(5) Use of scientific calculator CASIO FX 82/83 FX-100 or equivalent of other companies is allowed.

SECTION - I

Q.1. (A)	**Each of the following questions carry equal marks**	**10**
1.	For a carbon granule microphone, determines a suitable value for m, if the contribution from each of the higher order terms is to be less than $0.01I_0$. What happened if the ratio φ/φ_0 is not very small in case of an earphone?	
2.	What is NPN (New Public Network)?	
3.	Calculate the time required to dial the number 00-91-44-414630 using a rotary dial telephone. Assume that the subscriber takes 600mS on an average to rotate the dial for a single digit..	
4.	Estimate the number of crosspoint required to design an exchange that supports 500 users on a nonblocking basis and 50 transit, outgoing or incoming calls simultaneously.	
5.	How ISDN is different from PSTN?	
(B)	Explain briefly about various national and international standards organizations. Which department of India deals with Telecommunications?	**6**
(C)	Give the Classification of Switching system	**4.**
Q.2 (A)	What are the different modes of Centralized SPC and how all are different with one another in availability and fault occurrence situation? Explain one of them in detail	**8**

(B)	What are the disadvantages of Mannual Switching Exchange? If subscriber increases in large amount, give the solution for subscriber switchboard at the exchange.	7
	OR	
(A)	What is Common control Switching System and how it's different with Direct control Switching system? Explain the functional block diagram and working of common control switching system	8
(B)	For a two stage blocking network derive the expression for blocking probability P_B. Write all the underlying assumption clearly.	7
Q.3	**Attempt any Three**	**15**
1	Numbering plan in a telephone network must be independent of call routing? Why? Explain?	
2.	Explain Level 2 processing for a distributed SPC.	
3.	Discuss in detail the software architecture for SDL.	
4.	Compare the feature of single stage Vs multistage network.	
5.	Explain Reed Relay in Crosspoint Technology,.	

SECTION - II

Q.4(A)	**Answer following questions**	
1.	What do you mean by sampling interval? Why it is chosen as 125μs?	**2**
2	Write down the equatation of SC (Switching Capacity) for output-controlled time division switch. What should be the ideal value of SC? Explain the constraint that limits the SC.	**2**
3	Which one is the fastest configuration in TSI switch? Why it is so?	**2**
4	Over a 20-minute observation interval, 40 subscribers initiate calls. Total duration of the calls is 4800 seconds .calculate the load offered to the network by the subscriber s and the avg. subscriber traffic.	**2**
5	Define: Busy hour Busy hour calling rate	**2**
Q.4(B)	Explain TSI switch in detail with neat sketch. Show how slot interchange is possible.	**10**
Q.5(A)	Explain basic time division time switch. Also explain phased operation.	**7**
Q.5(B)	Explain lost cleared system with finite subscriber	**8**
	OR	
Q.5(A)	Explain basic time division space switching (input controlled & memory contolled). Compare SC of both approches. What can be concluded from that?	**9**
Q.5(B)	Explain GOS and blocking probability	**6**
Q.6	**Write short notes on(any three):**	**15**
	a) Numbering plan b) Classification of signaling techniques c) Echo suppressor d) BD process	