2014

Telecommunication System

Time Allotted : 3 Hours   Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words

as far as practicable

GROUP - A

(Multiple Choice Type Question)

1. Choose the correct alternatives for any ten of the following:

10

x 1 = 10

i) A switiching network with unequal number of inlets and outlets is called

    a)Symmetric Network

    b) Asymmetric Network

    c)Folded Network

    d)Electronic Switching System

ii)ESSS stands for

    a)Electronic Switching System

    b)Effective Electronic Switching System

    c)Early Electronic SSwitching System

    d)None of these

iii)The ratio of number of successful calls to the total number of calls attemts is

    a)Busy our call attempt

    b)Call completion rate

    c)Busy our calling rate

d) Traffic load

iv)Network termination interface between a customer premises and ISDN network is called

a)TE1

b)TE2

c)NT1

d)NT2

v)MTTR means

a)Mean time to repair

b)Maximum time to repair

c)Most time to repair

d)Mean time to represent

vi)GOS in India is

a)0.002

b)0.02

c)0.2

d)2

vii)The inter digit gap between two digits in pulse dialing is at least

a)200 ms

b)200 ns

c)200 ms

d)none of these

viii)CHILL is a

a)CCITT language

b)IEEE language

c)IEE language

d)ANSI language

ix)Which of the following is correct

    a)IE=60 CCS

    b)IE=36 CCS

    c)DE=3600 CCS

    d)None of these

x)In DTMF tone, the frequency used is

    a)697 Hz/1209 Hz

    b)920 Hz/1478 Hz

    c)220 Hz/540 Hz

    d)50 Hz/120 Hz

xi)ESS stands for

    a)Electronic Switching System

    b)Effective Electronic Switching System

    c)Early Electronic SSwitching System

    d)None of these

xii)In a strowger system the high value of CCI indicates

    a)good design

    b)poor design

    c)No impact on design

    d)None of these

GROUP-B

(Short Answer Type Questions)

Answer any three of the following.

3 x 5=15

2. What do you mean by point-to-point communication? Mention the dis advantage of the scheme.

(3+2)

3. What is BORSCHT function? What is this important in electronic exchanges?

(2+3)

4. What do you mean bye electronic space division switching? Given MTBF=2000hr and Mttr=4 Hrs, calculate unavailability of signle and the dual processor system.

(3+2)

5. How many types of transmission media are used in telecommunication? What are the disadvantages of twisted pain cable over parallel wire cable? What are step index fibre and graded index fibre?

(1+2+2)

6. Explain the operation of 2-wire to 4-wire Hybid system?

GROUP-C

(Long Answer Type Questions)

Answer any three of the following.

3 x 15=45

7. a) What are the differences betweenin channel ssignaling and common channel signaling?

b)What do you mean by Time-division switching?

c)Classify Time-division switches.

d)Explain the principle of operation of input-controlled Time-division Space switching.

(5+2+3+5)

8. a)Explain the hierarchical routing with suitable diagram.

b)Explain the various signaling tones with diagram.

(8+7)

9. a)Explain centralized SPC and the different mode of it.

    b)How load sharing mode is superior to synchronous duplex mode?

    c)How centralized SPC differs from distributed SPC?

    d)In the load sharing configaration of centralize SPC MTBF=3000hrs. And MTTR=3 hrs.

    Calculate the unavailability for signle and dual processor system.

    (5+2+3+5)

10. i)What are GOS and Blocking probability?

    ii)Derive the Erlang's B formula.

    iii)During 1200 calls offered to a group of trunks 12 calls were lost. The average call duration

    was 3 minutes.

    Find the traffic offered and traffic carried in Erlang. Also find out the value of GOS and

    the total duration of period of congestion.

    (5+5+5)

11. Write short notes one any three of the following;

    i)DTE and DCE

    ii)T Carrier System

    iii)Voice over IP

    iv)ADSL

    v)5ESS systems

    (3 x 5)