Announcements

Course

Courses » Satellite Communication

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reviewer2@nptel.iitm.ac.in ▼

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Unit 7 - Week 6 Course outline **Assignment-6** The due date for submitting this assignment has passed. Due on 2017-10-04, 23:59 I How to access the As per our records you have not submitted this assignment. portal? Week 1 A 36 MHZ bandwidth limited transponder is allotted with voice only carrier in F Week 2 mode with 45 KHz separation between centre frequency of carriers. Assuming Week 3 voice activity, what will be the number of carriers? Week 4 A. 320 Week 5 B. 600 Week 6 C. 180 Ouiz: Assignment-6 D. none of these O Lecture 26: Multiple No, the answer is incorrect. O Lecture 27: Multiple Score: 0 Access - 2 **Accepted Answers:** Lecture 28: Multiple A. 320 Access - 3 Lecture 29: Multiple Access - 4 A satellite based CDMA system operating on full transponder, needs  $\frac{E_b}{N_0}$  of 6 dB Lecture 30: Multiple much processing gain is required if the total multiple access interference power Access - 5 Solution of Assignmenttimes more than that of each carrier power? Week 6 : Assignment A. 20 dB Solution B. 22 dB Week 7 C. 24 dB Week 8 D. 26 dB No, the answer is incorrect Score: 0 Accepted Answers: D. 26 dB 5 points In a DS-CDMA system, the information bit rate and chip rate are respective Kbps and 20 Mbps. The processing gain of the system will be A. 30 dB B. 40 dB

Accepted Answers:

C. 20 dB
D. 10 dB

Score: 0

5 points

A 36 MHz transponder has maximum EIRP of 50 dBw and has multiple can Receive station G/T is -10 dB/K, free space loss is 192 dB, miscellaneous le 6.6 dB. Each 10 KHz carrier needs 45 dBHz C/N<sub>0</sub>. Find number of carriers can supported by the transponder.



A satellite link operating with TDMA transmits data at a rate of 120 Mbps. The has 15 channels and uses 11088 bits as overhead bits in total. Assuming the duration of 2 milliseconds, determine the frame efficiency of the TDMA link.

```
A. 80%
B. 85%
C. 90%
D. 95%

No, the answer is incorrect.
Score: 0
Accepted Answers:

D. 95%

6)
5 points
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For the downlink transmission equation of full transponder TDMA system, what expression in dBHz for maximum bit rate that can be supported in a power litransponder?

```
A. Bit rate=EIRP<sub>satellite</sub>+(G/T)<sub>(earth station)</sub>-L<sub>uplink</sub>-k

B. Bit rate=EIRP<sub>satellite</sub>+(G/T)<sub>(earth station)</sub>-L<sub>downlink</sub>-k

C. Bit rate=EIRP<sub>satellite</sub>+(G/T)<sub>(earth station)</sub>-L<sub>downlink</sub>-k-(E<sub>b</sub>/N<sub>0</sub>)

D. none of these

No, the answer is incorrect.
Score: 0

Accepted Answers:

C. Bit rate=EIRP<sub>satellite</sub>+(G/T)<sub>(earth station)</sub>-L<sub>downlink</sub>-k-(E<sub>b</sub>/N<sub>0</sub>)

7)

5 points
```

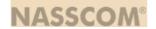
From each station, 24 terrestrial channels are multiplexed in TDM to transmit a carrier with BPSK modulation, bit rate of 1.544 Mbps, 20% filter roll off factor 20% guard band. The required C/N per carrier is 5.5 dB and total C/N<sub>0</sub> th can support for a full transponder operation is 81 dBHz. Find the number of F carriers for a transponder

A. 10
B. 15
C. 20
D. 12

No, the answer is incorrect.
Score: 0
Accepted Answers:

Satemite	Communication Onit 7 - Week o	
B. 15		
watt saturated output p	balanced sharing transponde ower with output back off o 15 MHz which is 50% of the d by this carrier.	f 3 dB. The bandwidth red
<ul><li>A. 20 dBw</li><li>B. 15 dBw</li></ul>		<u> </u>
<ul><li>C. 10 dBw</li><li>D. 5 dBw</li></ul>		in
No, the answer is incorrect. Score: 0 Accepted Answers: C. 10 dBw		<b>8</b> +
dBw respectively. Receive	I transponder the bandwidth we $G/T = 30$ dB/K, Losses = d the system requirement of apported.	= 198.6 dB. Each carrier red
<ul> <li>A. 34</li> <li>B. 36</li> <li>C. 38</li> <li>D. 40</li> </ul>		
No, the answer is incorrect. Score: 0 Accepted Answers: B. 36		
	channels for a TDMA link w ficiency of 85%, and voice ch	
<ul><li>A. 665</li><li>B. 666</li></ul>		
<ul><li>C. 667</li><li>D. 668</li></ul>		
No, the answer is incorrect. Score: 0		
Accepted Answers: A. 665		
You were allowed to submit this assignment	ent only once.	
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