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BIEL-012

00903

B.Tech. Electronics and Communication Engineering (BTECVI)

Term-End Examination December, 2012

BIEL-012 : ANALOG AND MIXED MODE VLSI

DESIGN							
Time: 3 hours			Maximum Marks : 70				
:		, ,					
	(iii)	Use of s	cientific	calculator is permitted.			
Discuss the following DAC specifications :							
(a)	Resc	olution	(b)	DNL			
(c)	INL		(d)	Dynamic Range			
Find	the v	value of 1	LSB an	d V _{FS} for a 4 bit and			
8 bit	DAC	with V _R	_{EF} =5V.				
-		~	ing DA	C and discuss related	10		
With a neat block diagram of two step flash ADC explain its working.							
What is the need of compensation in opamp design? Discuss any scheme.							
	Discu (a) (c) Find 8 bit Explainism	: (i) (ii) (iii) Discuss the (a) Rescond (c) INL Find the version of the versio	: (i) Attempt (ii) Assume (iii) Use of so Discuss the following (a) Resolution (c) INL Find the value of 18 bit DAC with V _R Explain charge scal mismatch errors. With a neat block dexplain its working	: 3 hours : (i) Attempt any set (ii) Assume suitable (iii) Use of scientific	: 3 hours (i) Attempt any seven questions. (ii) Assume suitable missing data, if any. (iii) Use of scientific calculator is permitted. Discuss the following DAC specifications: (a) Resolution (b) DNL (c) INL (d) Dynamic Range Find the value of 1LSB and V _{FS} for a 4 bit and 8 bit DAC with V _{REF} =5V. Explain charge scaling DAC and discuss related mismatch errors. With a neat block diagram of two step flash ADC explain its working.		

5.	Why is the decimation filter used in data converters? Describe decimation and averaging	10
	circuit operation.	
4	Explain the purpose of each stage of comparator	10 10

- 6. Explain the purpose of each stage of comparator 10 with neat schematic.
- 7. Explain in detail: Floor-planning; power supply and grounding issues in mixed signal layouts.
- 8. With a neat process flow diagram, explain submicron CMOS technology and bring out the differences as compared to CMOS technology.
- Explain how MOSFET behaves as capacitor. Also 10 discuss floating MOS capacitor.
- 10. Write short on *any two* of the following. 2x5=10
 - (a) Clock feedthrough and charge injection.
 - (b) Delay and adder element
 - (c) Sample and hold characteristics
 - (d) Interpolating filters.