BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: B.TECH   SEMESTER: VII
BRANCH: ECE   SESSION: MO/2022

SUBJECT: EC411 MIXED SIGNAL DESIGN

TIME: 2 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

				CO	BL
Q1	(a)	Draw a block diagram of a mixed-signal circuit design and briefly explain its components.	[2]	CO1, CO2	L1
Q1	(b)	Explain Impulse train sampling with suitable diagrams. Also draw the spectrum of a sinewave before and after sampling.	[3]	CO1, CO2	L2
Q2	(a)	Explain the time-domain impulse response of an ideal RCF.	[2]	CO1, CO2	L1
Q2	(b)	Obtain the frequency response of a switched capacitor low-pass filter.	[3]		L3
Q3	(a)	Explain the working of single-ended sample and hold circuit.	[2]	CO1, CO2	L1
Q3	(b)	Explain the top-down and bottom-up design flow in mixed signal circuit design.	[3]	CO1, CO2	L4
Q4	(a)	Write a short note on mixed signal hardware description languages.	[2]	CO1, CO2	L1
Q4	(b)	What techniques are being used by AMS IP designers to achieve high level of AMS IP reuse?	[3]	CO1, CO2	L5
Q5	(a)	What do you mean by Full chip Signoff?	[2]	CO1, CO2	L1
Q5	(b)	What is substrate noise and how it is prevented?	[3]	CO1, CO2	L4

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