R15

Code No: 125EB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2017
LINEAR AND DIGITAL IC APPLICATIONS
(Common to ECE, ETM)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	Define input offset voltage.	[2]
b)	List features of 741 op-amp.	[3]
c)	Discuss about all pass filters.	[2]
d)	List the application of 565 PLL.	[3]
e)	List different ADC and DACs.	[2]
f)	List specifications of DAC.	[3]
g)	Which of the parameters decide the fan out and how?	[2]
h)	Explain noise margin and propagation delay with respect to CMOS logic.	[3]
i)	What is race around condition? How is it avoided?	[2]
j)	Explain one application of SR latch.	[3]

PART - B

(50 Marks)

2. Draw the circuit diagram of a two input non-inverting type summing amplifier and derive the expression for the output voltage. [10]

OR

3. Explain the working of instrumentation amplifier with suitable diagram. [10]

4. Draw the block diagram of 565 PLL and explain about each block. Make circuit connections to track the input signal and explain its operation. [10]

OR

5. Design a wide band pass filter with f_L=500 Hz and f_H = 2KHz, and a pass band again = 5 for both sections of filter. Also determine the value of Q for the filter. [10]

6. Which is the fastest ADC? Explain the operation and discuss its merits and de-merits. [10]

OR

7. With a neat diagram explain the working principle of R-2R ladder type DAC. [10]

8. With neat circuit diagram explain the working of a 4-bit odd parity generator. [10]

OR

9. Design 16×1 multiplexer using 4×1 multiplexer. [10]

10. Design a modulo 12 ripple counter using 74×74. [10]

OR

11. How many address and data lines are required to access all the locations of dynamic RAM cell arrays specified below? [10]

a) 4M × 4 b) 1M × 1 c) 1M × 4 d) 4M × 1

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