Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018
Course Code: EC212
Course Name: LINEAR INTEGRATED CIRCUITS AND DIGITAL ELECTRONICS (MC)

Max. Marks: 100   Duration: 3 Hours

PART A
Answer all questions, each carries 5 marks.

1   List out the ideal and practical characteristics of Op-amp.

2   Explain the working of an astable multivibrator with a neat diagram.

3   Draw a circuit to overcome the disadvantages of a 3 bit binary weighted DAC.

4   Convert $(3456)_{10}$ to octal and hexadecimal.

5   Implement a half subtractor using logic gates.

6   Distinguish PLA from PAL.

7   Draw a diagram for parallel in parallel out shift register using D Flip Flop.

8   Explain the working of Johnson counter.

PART B
Answer any 3 questions, each carries 10 marks.

9   Design an integrator of 1.5 KHz. Draw its frequency response.

10   List out the physical significance of an instrumentation amplifier with a neat diagram.

11   Explain how op-amp acts as an S/H circuit.

12   Derive the transfer function of a first order low pass filter.

13   Minimize the $f(a,b,c,d) = \sum m(5,7) + d(8,9,13,15)$

PART C
Answer any 2 questions, each carries 15 marks.

14   Implement full adder using 3 x 8 decoder.

15   Realize $f = \sum m(0,3,4)$, $f = \sum m(4,5,7)$ & $f = \sum m(4,6,7)$ using PLA and PAL.

16   Design a 3 bit up and down synchronous counter.

17   Obtain J-K Flip flop from S-R flip flop

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