Total No. of Questions—**8**] [Total No. of Printed Pages—**2**

Seat No.	

[5459]-138

S.E. (ELECTRONICS/E&TC) (II Sem.) EXAMINATION, 2018
INTEGRATED CIRCUITS
(2015 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Neat diagrams must be drawn wherever necessary.
(*ii*) Your answers will be valued as a whole.
(*iii*) Assume suitable data, if necessary.

1. (*a*) Draw block diagram of op-amp and explain in detail. [6]

(*b*) Draw neat circuit diagram of :

(*i*) Non-inverting amplifier [2]

(*ii*) Inverting summing amplifier. [4]

Or

2. (*a*) Write notes on : [6]

(*i*) Level shifter

(*ii*) Current mirror circuits.

(*b*) Draw neat circuit diagram of : [6]

(*i*) Voltage follower

(*ii*) Single op-amp difference amplifier.

3. (*a*) Draw circuit diagram of inverting symmetrial Schmitt trigger and plot hysteresis and explain in short. [6]

(*b*) Draw V to I converter with grounded load and explain with its output equation. [6]

P.T.O.

Or

4. (*a*) Draw circuit diagram of precision full wave rectifier with showing input and output waveform. [6]

(*b*) Draw V to I converter with floating load and explain with its output equation. [6]

5. (*a*) Define the term Free running frequency, Lock range and Capture range in PLL. [6]

(*b*) Explain the operation of Wein bridge oscillator with neat circuit diagram. [7]

Or

6. (*a*) Explain PLL with its block diagram. [6]

(*b*) Draw circuit diagram of phase shift oscillator and explain its operation. [7]

7. (*a*) Design wide band pass filter having F_L = 1 kHz and F_h = 6 kHz with pass band gain is 2.
Draw circuit diagram with its component values. [7]

(*b*) Draw circuit diagram of first order LPF with its frequency response. [6]

Or

8. (*a*) Design a first order band reject filter for F_h = 2 kHz and F_L = 6 kHz with pass band gain is 3.
Draw circuit diagram with its component values. [7]

(*b*) Draw circuit diagram of first order HPF with its frequency response. [6]