Diabram

S. E. (Electrical) (IV) (Rev.) . 19/12/07

Analog & Digital Integrated Circuit

Con/5169–07.

(REVISED COURSE) CD–5787

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Assume **suitable** data whenever **necessary**.
(4) **Figures** to the **right** indicate **full** marks.

1. (a) Draw the functional block diagram of IC 723 and explain its operation. 10
   (b) Explain V to I converter using op-amp with (i) floating load and 10
   (ii) grounded load.

2. (a) Explain in detail ECL logic family with its transfer characteristics. 10
   (b) Explain the following characteristics of logic families : 10
      (i) Speed of operation
      (ii) Noise Immunity
      (iii) Fan in
      (iv) Fan out
      (v) Current and voltage parameters.

3. (a) What is instrumentation amplifier ? State its important characteristics and 10
   derive the expression for O/P voltage.
   (b) Explain Wein bridge oscillator using op-amp and Design it for frequency of 10
   oscillation of 2 KHz.

4. (a) Draw and explain monostable multivibrator using IC-555. 10
   (b) What are the limitations of basic integrator circuit and explain how it can be 10
   overcome by the use of practical integrator circuit.

5. (a) Draw and explain first order low pass butterworth filter. Derive the expression 10
   for cut off frequency.
   (b) Explain the applications of Regulator IC-78XX as (i) Current Source 10
   (ii) Current Booster.

6. (a) Explain temperature controller using IC-3059. 10
   (b) State and explain the characteristics of DAC. 10

7. Write notes on (any **four**) : 20
      (a) IC-SL-440
      (b) Sample and Hold Circuit
      (c) Static MOS RAM Cell
      (d) TTL to CMOS Interfacing
      (e) Switching Regulator.

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