Reg. No. : | | | | | | | | | | |

Question Paper Code: 34304

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth Semester

Electrical and Electronics Engineering

01UEE404 – ANALOG INTEGRATED CIRCUITS

(Common to Instrumentation and Control Engineering)

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. State the advantages of integrated circuits over discrete components.
2. What are the two important properties of SiO_2?
3. List the ideal Op-amp characteristics.
4. What is the maximum undistorted amplitude that a sine wave input of 10 *kHz*, can produce at the output of an op-amp whose slew rate is 0.5 $V/\mu S$?
5. Give on application for each of the following circuits: Peak detector, comparator, Schmitt trigger and clamper
6. What output voltage would be produced by a D/A converter whose output range is 0 to 10 *V* and whose input binary number is 0110for a 4 bit DAC.
7. In a astable multivibrator using IC 555 timer $RA = 6.8\ k\Omega$, $RB = 3.3\ k\Omega$, $C = 0.1\ \mu F$. Calculate the free running frequency
8. Under what conditions will the Gilbert cell function as a multiplier?
9. How current boosting is achieved in a 723 IC?
10. What are the limitations of three terminal regulator?

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss briefly about the fabrication methods for FET and diodes. (16)

Or

(b) Explain in detail, the fabrication of resistance and capacitance. (16)

12. (a) Explain the working of integrator with a neat circuit diagram. (16)

Or

(b) Discuss in detail about differential amplifier using op amp. (16)

13. (a) Explain the types of Clipper circuit with neat diagrams. (16)

Or

(b) With neat diagram, explain the working of SAR type and Flash type A/D converters. (16)

14. (a) With the help of schematic diagram, explain the operation of IC 566 VCO and derive its output frequency. (16)

Or

(b) Explain how frequency multiplication is done using PLL. (16)

15. (a) Explain the block diagram of a switched mode power supply in detail. (16)

Or

(b) Draw the schematic of ICL 8038 function generator and discuss its features. (16)

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