Reg. No. :

Question Paper Code: 54305

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Fourth Semester

Electrical and Electronics Engineering

15UEE405- ANALOG INTEGRATED CIRCUITS

(Regulation 2015)

Duration: 1:45 hour   Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

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/μS*?

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 *kΩ*, *RB* = 3.3 *kΩ*, *C* = 0.1 *μF*. 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?

11. Name the different methods used in fabrication of integrated resistors.

12. Why do we use aluminium for metallization?

13. Define the following terms: a) CMRR b) Slew rate.

14. Define thermal drift..

15. List out the features of instrumentation amplifier.

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16.	Explain briefly about the logic families of digital IC's.	CO1-App	(10)
17.	Draw the circuit diagram of op-amp differentiator, integrator and derive an expression for the output in terms of the input.	CO2 -App	(10)
18.	Explain the working of an instrumentation amplifier with a circuit. Give its characteristics and applications.	CO3- Ana	(10)
19.	Draw the block diagram of an Astable multivibrator using 555timer and derive an expression for its frequency of oscillation.	CO4 -U	(10)
20.	Explain in detail about the LM 380 power amplifier.	CO5- U	(10)

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