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

Question Paper Code: 34304

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fourth Semester

Electrical and Electronics Engineering

01UEE404 – ANALOG INTEGRATED CIRCUITS

(Common to Instrumentation and Control Engineering)

(Regulation 2013)

Duration: 1:15hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. In Monolithic IC

   (a) Performance depends on the substrate
   (b) Performance does not depend on the substrate
   (c) Performance depends on interconnects
   (d) Performance depends on packaging

2. How many leads does the TO-5 metal can package of an operational amplifier have

   (a) 8, 10, or 12 (b) 6, 8, or 10 (c) 8 or 14 (d) 8 or 16

3. Specified value of CMRR for 741 opamp is

   (a) 30 dB (b) 40 dB (c) 90 dB (d) 120 dB

4. What is the scale multiplier (factor) of a basic integrator?

   (a) R/C (b) C/R (c) –RC (d) –1/RC

5. In applications where measurement of a physical quantity is involved, the Op-amp circuit recommended is

   (a) Basic non-inverting amplifier (b) A comparator
   (c) An active filter (d) An instrumentation amplifier

6. In a sample and hold circuit the following statement is false

(a) Sample time is much smaller than hold time

(b) Aperture time is the delay between the time that the pulse is applied to the switch and the actual time the switch closes

(c) Acquisition time is the time it takes for the capacitor to charge from one voltage to another voltage

(d) The voltage across the hold capacitor changes by 50% during hold time

7. Which of the following techniques are used for the analog multipliers?

(a) Logarithmic multipliers (b) Variable trans-conductance multipliers

(c) Both (a) and (b) (d) None of these

8. How many V_{cc} connections does the 565 PLL use?

(a) 0 (b) 1 (c) 2 (d) 3

9. Regulators in which the transistor act in the active region are called

(a) linear regulator (b) switching regulator

(c) non linear regulator (d) adjustable regulator

10. Voltage regulator LM7805 has an output voltage of

(a) 5 volts (b) -5 volts (c) 0.5 volts (d) -0.5 volts

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Discuss briefly about the fabrication methods for FET and diodes. (8)

12. Explain the working of integrator with a neat circuit diagram. (8)

13. Explain the types of Clipper circuit with neat diagrams. (8)

14. With the help of schematic diagram, explain the operation of IC 566 VCO and derive its output frequency. (8)

15. Explain the block diagram of a switched mode power supply in detail. (8)