

- Q.27 Explain working of All Pass Filter.
- Q.28 Distinguish between inverting and non-inverting amplifiers.
- Q.29 Give the applications of Multiplexer.
- Q.30 Draw the symbol of AND Gate and its truth table.
- Q.31 Explain different feedback configurations.
- Q.32 Discuss input and output offset voltages.
- Q.33 Draw and explain common mode configuration in OP-Amp.
- Q.34 With the help of truth table explain NAND and NOR gates.
- Q.35 Write a short note phase-locked loop.

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain working of DAC comparator with the help of proper diagram.
- Q.37 Write a short note on the following:-
a) De-multiplexer b) Flip-Flop
- Q.38 Discuss how the 555 IC can work as monostable multivibrator. Also draw its waveforms.

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4th Sem / EI

**Subject:- Linear and Digital Integrated Circuits /
Linear Int. Circuits.**

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 If V_1 and V_2 are the two input voltages, the output voltage of an op-amp is given by _____
a) $V_o = A_x(V_1 - V_2)$ b) $V_o = V_1 - V_2$
c) $V_o = A_x(V_1 + V_2)$ d) $V_o = V_1 \times V_2$
- Q.2 Package density of MSI is _____
a) less than 10
b) more than 10 but less than 100
c) more than 100 but less than 1000
d) more than 1000
- Q.3 An ideal OP-AMP has _____ output resistance.
a) zero b) infinity
c) 1 k Ω d) 100 k Ω
- Q.4 Which of the following electrical characteristics is not exhibited by an ideal op-amp?
a) Infinite voltage gain

- b) Infinite bandwidth
 - c) Infinite output resistance
 - d) Infinite slew rate
- Q.5 An astable multivibrators has _____ states.
- a) no stable b) one stable
 - c) two stables d) more than two
- Q.6 The full form of DAC is _____
- a) digital to analog computer
 - b) digital analysis calculator
 - c) data accumulation converter
 - d) digital to analog converter
- Q.7 The unit of inductance is _____
- a) henry b) Weber
 - c) Coulomb d) None of the above
- Q.8 Which IC is used as NAND gate?
- a) IC 7402 b) IC 7400
 - c) IC 7404 d) IC 7408
- Q.9 The gain of an op-amp emitter follower is _____.
- a) zero b) infinity
 - c) unity d) very high
- Q.10 The output is obtained on which pin of op-amp IC.
- a) pin-1 b) pin-3
 - c) pin-5 d) pin-7

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 What is CMRR?
- Q.12 Define open loop gain.
- Q.13 Define attenuator.
- Q.14 What is the Astable multivibrator.
- Q.15 What is a 7408 IC?
- Q.16 How much power is consumed by IC 741.
- Q.17 What is monolithic IC's ?
- Q.18 Define thermal drift.
- Q.19 Define input offset current.
- Q.20 Draw the symbol of OR gate.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Describe working of Schmitt trigger.
- Q.22 Write a short note on encoder.
- Q.23 Explain OP-AMP as an integrator with the help of diagram
- Q.24 Define SVRR and slew rate of OP-AMP.
- Q.25 Explain OP-AMP as an adder with the help of diagram.
- Q.26 Draw the pin diagram of 741 OP-AMP.