

- 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)  $V_o = Ax(V_1 - V_2)$       b)  $V_o = V_1 - V_2$   
 c)  $V_o = Ax(V_1 + V_2)$       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)  $1 \text{ k}\Omega$       d)  $100 \text{ k}\Omega$
- 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 multivibrator 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.