CHAPTER-8. BASIC ELECTRONICS

ELECTRONIC DEVICES

[1] A diode can be used as a frequency multiplier because of its
- A. Junction capacitance
- **B. Non linearity**
- C. Avalanche voltage
- D. Forward breakover
- E. Charge carrier concentration

[2] Which of the following is not a common form of data transmission
- **A. Polarization modulation**
- B. Frequency modulation
- C. Amplitude modulation
- D. Phase modulation
- E. Pulse modulation

[3] A very brief, high voltage spike on an ac power line is called as
- A. A bleeder
- B. An arc
- **C. A transient**
- D. An avalanche
- E. A clipped peak

[4] Which of the following is not characteristic of an oscillator?
- **A. Negative feedback**
- B. Good output to input coupling
- C. Reasonably high transistor gain
- D. Alternating current signal output
- E. Usefulness as a signal generator

[5] The other name for beta of BJT is
- **A. Current amplification factor**
- B. Voltage amplification factor
- C. Power amplification factor
- D. Maximum amplification frequency
- E. Optimum amplification frequency

[6] You can find the zener diode in
- A. The mixer in a superheterodyne receiver
- B. The PLL in a circuit for detecting FM
- C. The product detector in a receiver for SSB
- **D. The voltage regulator in a power supply**
- E. The AF oscillator in an AFSK transmitter

[7] When the bias in an FET stops the flow of current, the condition is called
- A. Forward breakover
- B. Cutoff
- C. Reverse bias
- **D. Pinchoff**
- E. Avalanche

[8] The VA rating of a transformer is an expression of
- A. The maximum frequency at which it can function
- B. The type of core material it has
- C. The voltage step-up or step-down ratio
- D. The impedance transfer ratio
- **E. None of the above**

[9] In N-type semiconductor, the minority carriers are
- A. Electrons
- B. Protons

C. Holes

D. Positrons

[10] A disadvantage of a half wave rectifier is the fact that

    A. The output voltage is excessive compared to that of a full-wave rectifier

    B. The output current is excessive compared to that of a full-wave rectifier.

    C. The output waveform is harder to filter than is the case with a full wave rectifier

    D. It requires several expensive diodes, whereas a full wave rectifier requires only a single diode

[11] A power gain of 30dB is equivalent to which amplification factor?

    A. 0.001

    B. 1/30

    C. 30

    D. 1000

    E. None

[12] A differential amplifier, amplifies

    a. and mathematically differentiates the average of the voltages on the two input lines

    b. and differentiates the input waveform on one line when the other line is grounded

    c. the difference of voltages between the two input lines

    d. and differentiates the sum of the two input waveform

[13] The type of power amplifier which exhibits crossover distortion in its output is

    a. Class A

    b. Class B

    c. Class AB

    d. Class C

[14] The lowest output impedance is obtained in case of BJT amplifiers for

    a. CB configuration

    b. CE configuration

    c. CC configuration

    d. CE with RE configuration

[15] The upper cutoff frequency of an RC coupled amplifier mainly depends upon

    a. Coupling Capacitor

    b. Emitter bypass capacitor

    c. Output capacitance of signal source

    d. Inter-electrode capacitance and stray shunt capacitance

[16] Just as a voltage amplifier amplifies signal voltage, a power amplifier

    a. amplifies power

    b. amplifies signal current

    c. merely converts the signal ac power into the dc power

    d. merely converts the dc power into useful ac power

[17]An oscillator of the LC type that has a split capacitor in the circuit is

    a. Hartly oscillator

    b. Colpitts oscillator

    c. Weinbridge oscillator

    d. R-C phase shift oscillator

[18] The function of bleeder resistor in a power supply is

    a. the same as that of load resistor

    b. to ensure a minimum current drain in the circuit

    c. to increase the output dc voltage

    d. to increase the output current

[19] In a bistable multivibrator circuit, commutating capacitor is used

    a. to increase the base storage charge

    b. to provide ac coupling

    c. to increase the speed of response

    d. to provide the speed of oscillations

[20] Removing bypass capacitor across the emitter-leg resistor in a CE amplifier causes

    (A) increase in current gain.

(B) decrease in current gain.

(C) increase in voltage gain.

(D)decrease in voltage gain.

[21] Removing bypass capacitor across the emitter leg resistor in a CE amplifier causes

       a. increase in current gain

       b. decrease in current gain

       c. increase in voltage gain

       d. decrease in voltage gain

[22] The minimum number of flip-flops required to construct a mod-75 counter is

       a. 5

       b. 6

       c. 7

       d. 8

[23] The important characteristic of emitter-follower is

       a. High input impedance and high output impedance

       b. High input impedance and low output impedance

       c. Low input impedance and low output impedance

       d. Low input impedance and high output impedance

[24] When an amplifier is provided with current series feedback, its

       a. Input impedance increases and output impedance decreases

       b. Input and output impedance both decrease

       c. Input impedance decreases and output impedance increases

       d. Input and output impedance both increase

[25] The frequency of oscillation of a tunnel-collector oscillator having L= 30μH and C = 300pf is nearby

       a. 267 kHz

       b. 1677 kHz

       c. 1.68 kHz

       d. 2.67 kHz

                 HINT: - fo = 1/[2(pi)*square root(LC)]

[26] The control terminal (pin 5) of 555 timer IC is normally connected to ground through a capacitor (0.01μF). This is to

       a. Protect the IC from inadvertent application of high voltage

       b. Prevent false triggering by noise coupled onto the pin

       c. Convert the trigger input to sharp pulse by differentiation

       d. Suppress any negative triggering pulse

[27] The fan out of a MOS logic gate is higher than that of TTL gates because of its

       a. Low input impedance

       b. high output impedance

       c. Low output impedance

       d. High input impedance

[28] The common collector amplifier is also known as

       a. Collector follower

       b. Base follower

       c. Emitter follower

       d. Source follower

[29] In class-A amplifier, the output current flows for

       a. A part of the cycle or the input signal

       b. The full cycle of the input signal

       c. Half the cycle of the input signal

       d. 3/4th of the cycle of the input signal

[30] In an amplifier with negative feedback

       a. Only the gain of the amplifier is affected

       b. Only the gain and bandwidth of the amplifier are affected

       c. Only the input and output impedance are affected

       d. All of the four parameters mentioned above would be affected

[31] When the elements of an RLC circuit are both magnitude scaled and frequency scaled, which quality is unaffected?

  a. resistor

  b. resonant frequency

  c. bandwidth

  d. quality factor

[32] What kind of filter can be used to select a signal of one particular radio station?

  a. low pass

  b. high pass

  c. band pass

  d. band stop

[33] A voltage source supplied a signal of constant amplitude, from 0 to 40kHz, to an RC lowpass filter. The load resistor experiences the maximum voltage at

  a. dc

  b. 10 kHz

  c. 20 kHz

  d. 40 kHz

[34] The most commonly used amplifier in sample & hold circuits is

  A. A unity gain non-inverting amplifier

  B. A unity gain inverting amplifier

  C. An inverting amplifier with a gain of 10

  D. An inverting amplifier with a gain of 100

[35] Three identical amplifiers with each one having a voltage gain of 50, input resistance of 1K & output resistance of 250,are cascaded. The open circuit voltage gain of combined amplifier is

  A. 49dB

  B. 51dB

  C. 98dB

  D. 102dB

[36] The cascade amplifier is a multistage configuration of

  A. CC-CB

  B. CE-CB

  C. CB-CC

  D. CE-CC

[37] The current gain of a BJT is

  A. $g_m r_0$

  B. g_m / r_0

  C. $g_m r_\pi$

  D. g_m / r_π

[38] Introducing a resistor in the emitter of a common amplifier stabilizes the dc operating point against variations in

  A. Only the temperature

  B. Only the β of the transistor

  C. Both Temperature & β

  D. None of the above

[39] Voltage Series feedback (also called series-shunt feedback) results in

  A. Increase in both input & output impedences

  B. Decrease in both input & output impedences

  C. Increase in input impedence & decrease in output impedence

  D. Decrease in input impedence & increase in output impedence

[40] An amplifier without feedback has a voltage gain of a 50,input resistance of 1K & Output resistance of 2.5K. The input resistance of the current-shunt negative feedback amplifier using the above amplifier with a feedback of 0.2 is

  A. 1/11K

  B. 1/5K

  C. 5K

D. 11K

[41]Consider the parallel RLC circuit having R= 1, L= 1H, C=1F . What type of response will the circuit produce?

  a. Under damped
  b. Over damped
  c. Critically damped
  d. none of these

[42] How much inductance is needed to resonate at 5 kHz with a capacitance of 12nF?

  a. 2652 H
  b. 11.844 H
  c. 3.333 H
  d. 84.33 mH

[43] The difference between the half power frequencies is called the

  a. quality factor
  b. resonant frequency
  c. bandwidth
  d. cutoff frequency

[44] A parallel RLC circuit has C=0.25F & L=2H. The value of R which will create unity damping factor is

  a. 1
  b. 2
  c. 0.5
  d. 4

[45] A zero of the transfer function

$$H(s) = \frac{10(s+1)}{(s+2)(s+3)} \quad \text{is at}$$

  a. 10
  b. -1
  c. -2
  d. -3

[46] On the Bode magnitude plot, the slope of the pole $1/(5 + j\omega)^2$ is

  a. 20 dB/decade
  b. 40 dB/decade
  c. - 40 dB/decade
  d. -20 dB/decade

[47] On the bode phase plot, the slope of $[1 + j10\omega - \omega^2/25]^2$ is

  a. 45°/decade
  b. 90°/decade
  c. 135°/decade
  d. 180°/decade

[48] In an electric circuit, the dual of resistance is

  a. conductance
  b. capacitance
  c. open circuit
  d. inductance

[49] In a series RLC circuit, which of these quality factors has the steepest curve at resonance?

  a. Q = 20
  b. Q = 12
  c. Q = 8
  d. Q = 4

[50] In a parallel RLC circuit, the bandwidth B is directly proportional to R

  a. True
  b. False

[51] Wien bridge oscillator can typically generate frequencies in the range of

  a. 1kHz - 1 Mhz

b. 1 Mhz - 10MHz

c. 10MHz - 100MHz

d. 100MHz - 150MHz

[52] The barrier voltage present in a junction diode is the effect of

A. The P side and N side of the junction forming a battery

B. The emf required to move the holes fast enough to have the mobility equal to that of the electrons

C. The recombination of charge carriers across the junction leaving behind the opposite charged ions

D. The voltage needed to make the semiconductor material behave as a conductor

[53] Compare to BJT the FET has

A. High input impedance

B. High gain bandwidth product

C. Better current controlled behaviour

D. High noise immunity

[54] An intrinsic semiconductor at absolute zero temperature

A. Has a large number of holes

B. Behaves like an insulator

C. Behaves like a metallic conductor

D. Has few holes and same number of electrons

[55] For the operation of a depletion type N-MOSFET, the gate voltage has to be

A. Low positive

B. High positive

C. High negative

D. Zero

[56] An emitter follower has high input impedance because

A. Large emitter resistance is used

B. Large biasing resistance is used

C. There is negative feedback in the base emitter circuit

D. The emitter base junction is highly reverse biased

[57] In a differential amplifier an ideal CMRR is

A. Infinity

B. Zero

C. -1

D. +1

[58] In a PNP circuit, the collector

A. Has a arrow pointing inward

B. Is positive with respect to the emitter

C. Is biased at a small fraction of the base bias

D. Is negative with respect to the emitter

[59] A PNP transistor can be replaced with an NPN device and the circuit will do the same thing, provided that

A. The power supply or battery polarity is reversed

B. The collector and emitter leads are interchanged

C. The arrow is pointing inward

D. A PNP transistor can never be replaced with NPN transistor

[60] A BJT has

A. Three PN junctions

B. Three semiconductor layers

C. Two N type layers around a P type layer

D. A low avalanche voltage

[61] The band gap of silicon at room temperature is_____

A) 1.3 eV

B) 0.7 eV

C) 1.1 eV

D) 1.4 eV

[62] The primary reason for the widespread use of Silicon in semiconductor device technology is
        A) Abundance of silicon on the surface of the earth
        B) Larger bandgap of silicon in comparison to germanium
        C) Favorable properties of silicon-dioxide (SiO2)
        D) Lower melting Point

[63] The cascade amplifier is a multistage configuration of
        A) CC-CB
        B) CE-CB
        C) CB-CC
        D) CE-CC

[64] In a multi-stage RC coupled amplifier the coupling capacitor_____
        A) Limits the low frequency response
        B) Limits the high frequency response
        C) Does not affect the frequency response
        D) Block the DC component without affecting the frequency response

[65] In forward mode npn BJT, if the voltage Vcc is increased then the collector current will increase
        A. Due to ohm's law, higher Vcc causes higher current
        B. Due to base width decrease less carrier recombine in the base region
        C. As the gradient of the minority carriers in the base region becomes steeper
        D. Due to both the B and C

[66] A transistor is in active region when-
        a) IB = βIC
        b) IC= βIB
        c) IC=IE
        d) IC=IB

[67] In a JFET gates are always?
        a) forward biased
        b) reverse biased
        c) unbiased
        d) none

[68] In schotty barrier diode current flows because of?
        a) Majority carriers
        b) Minority carriers
        c) Majority and minority carriers
        d) None

[69] The early voltage of a BJT is VA = 75V. The minimum required collector current, such that the output resistance is at least r0 = 200kΩ, is
        (a) 1.67mA
        (b) 5mA
        (c) 0.375mA
        (d) 0.75mA

[70] TVS diode is used for
        (a) Voltage protection
        (b) Current protection
        (c) ESD protection
        (d) None of the above

[71] The amplifier is which current is proportional to the signal voltage, independent of source load resistance is called
        a)Current Amplifier
        b)Voltage Amplifier
        c)Transresistance amplifier
        d)Transconductance amplifier

[72] Alternatively the characteristic impedance is called
        a)Surge Impedance

b)Match Impedance

c)Alternative Impedance

d)Reflected Impedance

[73] In an RL circuit after a very long time of application of step voltage the inductance L is represented in its equivalent circuit as Incorrect!

a)Open Circuit

b)Short Circuit

c)L / 2

d)2L

[74] By passing a triangular wave through a differentiating circuit the output wave shape is

a)Spikes

b)Squarewave

c)Sawtooth

d)Sinewave

[75] Clipper circuits are used to obtain any one of the following waveforms

a)Sharper

b)Rectified

c)Fast Rising

d)Smaller Amplitude

[76] When a piece of copper and another of germanium are cooled from room temperature to 800 K then the resistance of -

a) Each of them increases

b) Each of them decreases

c) Copper increases and germanium decreases

d) Copper decreases and germanium increases

[77]When a sample of germanium and silicon having same impurity density are kept at room temperature then?

a) Both will have equal value of resistivity

b) Both will have equal value negative resistivity

c) Resistivity of germanium will be higher than that of silicon

d) Resistivity of silicon will be higher than that of germanium

[78] When an RC driving point impedance function has zeros at s= -2 and s=-5 then the admissible poles for the function would be?

a) s = 0; s = -6

b) s = 0; s = -3

c) s = 0; s = -1

d) s = -3; s = -4

[79] A transistor has CE parameter as hie = 10kW, hre=20 x 10-4 , hse = 100, hoe = 25 ms. The hib for this transistor will be-

a) 100 W

b) 99.01 W

c) 5m W

d) 101kW

[80] Which one of the following conditions for Z parameters would hold for a two port network containing linear bilateral passive circuit elements?

a) Z11 = Z22

b) Z12Z21 = Z11Z22

c) Z11Z12 = Z22Z21

d) Z12 = Z21

[81] For harmonic generation the amplifier used is

a)Audio Amplifier

b)Class-A Amplifier

c)RC Amplifier

d)class-C Turned Amplifier

[82] Zener diodes semiconductors are
a)Lightly Doped
b)Heavily Doped
c)Medium Doped
d)Not at all Doped

[83] In FET amplifiers, input is Incorrect!
a)A current signal
b)A voltage signal
c)Either a current or voltage signal
d)None of these

[84] H-parameters of a transistor
a)Are constant
b)Vary with temperature
c)Are dependent upon collector current
d)None of these

[85] In a voltage series feedback
a)Output resistance increases while input resistance decreases
b)Output and input resistances are reduced
c)Output and input resistances are increased
d)Output resistance decreases while input resistance increases

[86]In a saturated transistor
a)B-E junction is forward biased with C-B junction is reverse biased
b)Both the junctions are forward biased
c)B-E junction is reverse biased with C-B junction is forward biased
d)Both the junctions are reverse biased

[87]For an ideal noise free amplifier, the noise figure is
a)Zero
b)Zero dB
c)Infinity
d)1 dB

[88]When a junction is formed between a metal and a semiconductor, the depletion layer is
a)More on the side of the metal
b)Equal on both sides
c)Less on the side of the metal
d)Less on semiconductor side

[89] The impurity commonly used for realizing the base region of a silicon NPN transistor is _____
A) Gallium
B) Indium
C) Boron
D) Phosphorus

[90] A MOS capacitor made using P-type substrate is in the accumulation mode. The dominant charge in the channel is due to the presence of
A) Holes
B) Electrons
C) Positively charged ions
D) Negatively charged ions

[91] A Zener diode works on the principle of _____
A) Tunneling of charge carriers across the junction
B) Thermionic emission
C) Diffusion of charge carriers across the junction
D) Hopping of charge carriers across the junction

[82] A BJT is said to be operating in the saturation region if_____
A) Both the junctions are reverse biased
B) Base-emitter junction is reverse biased & base-collector junction is forward biased

C) Base-emitter junction is forward biased & base-collector junction is reverse biased

D) Both the junctions are forward biased

[93] To obtain very high input & output impedances in a feedback amplifier, the topology used is

A) Voltage-Series

B) Current-Series

C) Voltage-Shunt

D) Current-Shunt

[94] Cut off frequency of a bipolar transistor ___

A) Increase with the increase in base width

B) Increase with the increase in emitter width

C) Increase with the increase in the collector width

D) Increase with the decrease in the base width

[95] Negative feedback in amplifiers

A) Improves the signal to noise ratio at the input

B) Improves the signal to noise ratio at the output

C) Does not affect the signal to noise ratio at the output

D) Does not affect the signal to noise ratio at the input

[96] The action of JFET in its equivalent circuit can be represented as a

A. Current controlled Current source

B. Current controlled Voltage source

C. Voltage controlled Voltage source

D. Voltage controlled Current source

[97] A change in the value of the emitter resistance Re in a differential amplifier

A. Affects the difference mode gain Ad

B. Affects the common mode gain Ac

C. Affects both Ad and Ac

D. Does not effect either Ad and Ac

[98] Generally, the gain of a transistor amplifier falls at high frequencies due to the

A. Internal Capacitance of the device

B. Coupling capacitor at the input

C. Skin effect

D. Coupling capacitor at the output

[99] In a common emitter, unbypassed resistor provides

A. Voltage shut feedback

B. Current series feedback

C. Negative voltage feedback

D. Positive current feedback

[100] A constant current signal across a parallel RLC circuits gives an o/p of 1.4V at the signal frequency of 3.89kHz. At the frequency of 4 kHz, the o/p voltage will be

A. 1 V

B. 2 V

C. 1.4 V

D. 2.8 V

[101] Class AB operation is often used in power (large signal) amplifiers in order to

A. Get maximum effeciency

B. Remove even harmonics

C. Overcome a crossover distortion

D. Reducing collector dissipation

[102] The bandwidth of an RF tuned amplifier is dependent on

A. Q-factor of the tuned O/P circuit

B. Q-factor of the tuned I/P circuit

C. Quiescent operating point

D. Q-factor of the O/P and I/P circuits as well as quiescent operating point

[103]Most of the linear ICs are based on the two-transistor differential amplifier because of its

A. Input voltage dependent linear transfer characteristics

B. High voltage gain

C. High input resistance

D. High CMMR

[104] Negative feedback in an amplifier

A. Reduces gain

B. Increase frequency and phase distortion

C. Reduces bandwidth

D. Increase Noise

[105] A dc power supply has no-load voltage of 30V and a full-load voltage of 25V at full-load current of 1A. Its output resistance and load regulation respectively are

A. 5Ω & 20%

B. 25Ω & 20%

C. 5Ω &16.7%

D. 25Ω & 16.7%

[106] A Zener diode is used for

a) Voltage Regulation

b) Rectification

c) Noise Suppression

d) Blocking A.C

[107] An SCR is a device having

a) Three layers with four junctions

b) Three layers with two junctions

c) Four layers with three junctions

d) Two layers with three junctions

[108] An amplifier has a gain of 10,000 expressed in decibels the gain is

a) 10

b) 40

c) 80

d) 100

[109] An emitter follows has

a) High input impedance and high output impedance.

b) High input impedance and low output impedance.

c) Low input impedance and high output impedance.

d) Low input impedance and low output impedance.

[110] Semi-conductor diode time constant is equal to

a) The value of majority carrier life time

b) The life time of minority carrier

c) The diffusion capacitance time constant

d) Zero

[111] To prepare a P type semiconducting material the impurities to be added to silicon are

a) Boron, Gallium

b) Arsenic, Antimony

c) Gallium, Phosphorous

d) Gallium, Arsenic

[112] FET is a good signal chopper because

a) It exhibits no offset voltage at zero drain current

b) It occupies less space in integrated form

c) It is less noisy

d) It has got high input impedance

[113] In Bipolar Junction transistors, the type of configuration which will give both voltage gain and current gain is

a) CC

b) CB

c) CE

d) None

[114] To increase the input resistance and decrease the output resistance in negative feedback, the type used is
   a) Voltage Shunt
   b) Current Series
   c) Voltage Series
   d) Current Shunt

[115] A series capacitance used in a filter circuit represents
   a) Low-Pass
   b) Band-Pass
   c) High-Pass
   d) None

[116] An ideal power supply is characterized by
   a) Very large output resistance
   b) Very small output resistance
   c) Zero internal resistance
   d) Infinite internal resistance

[117] An ideal diode should have
   a) Zero resistance in the forward bias as well as reverse bias
   b) Zero resistance in the forward bias and an infinitely large resistance in reverse bias
   c) Infinitely large resistance in reverse bias
   d) Infinitely large resistance in forward as well as reverse bias

[118] One coulomb-per-second is equal to one:
   a) watt
   b) joule
   c) volt
   d) ampere

[119] Which of the following is one of the functions performed by a diode?
   a) filter
   b) amplifier
   c) rectifier
   d) inverter

[120] What is the "power factor"?
   a) ratio of true power to apparent power
   b) peak power times 0.707
   c) sin of the phase difference between E and I
   d) cos of the phase angle between true power and apparent power

[121] In order for a BJT to conduct under the conditions of no signal input, the bias must be
   A. In the reverse direction at the E-B junction, sufficient to cause forward breakover.
   B. In the reverse direction at the E-B junction, but not sufficient to cause avalanche effect.
   C. Such that the application of a signal would cause the transistor to go into a state of cutoff.
   D. Such that the application of a signal would cause the transistor to go into a state of saturation.
   E. Such that the application of a signal would cause the transistor to become nonlinear.

[122] The high input impedance of a MOSFET makes this type of device ideal for use in
   A. Weak-signal amplifiers
   B. High-power oscillators
   C. High-current rectifiers
   D. Antenna tuning networks
   E. Graphic equalizers

[123] The drain of a JFET is the analog of the
   A. Plate of a vacuum tube
   B. Emitter of a BJT
   C. Cathode of diode
   D. Positive electrode in a solar cell
   E. Substrate of a MOSFET

[124] One of the technical limitations of capacitive proximity sensors is the fact that they
        A. Are not very sensitive to objects that are poor electrical conductors.
        B. Are insensitive to objects that reflect light.
        C. Are insensitive to metallic objects.
        D. Cannot be used with oscillators
        E. Require extreme voltages in order to function properly

[125] The power factor in an ac circuit is defined as
        (a) The actual power divided by the maximum power the circuit can handle.
        (b) The ratio of the real power to the imaginary power.
        (c) The ratio of the apparent power to the true power.
        (d) The ratio of the true power to the apparent power.
        (e) The ratio of the imaginary power to the apparent power.

[126] The amount of current that a silicon photodiode can deliver in direct sunlight depends on
        (a) The forward breakover voltage.
        (b) The thickness of the substrate.
        (c) The surface area of the P-N junction.
        (d) The applied voltage.
        (e) The reverse bias.

[127] In an amplifier that employs a P-Channel JFET, the device can usually be replaced with an N-channel JFET having similar specifications, provided that
        (a). All the resistors are reversed in polarity for the circuit in question
        (b). The power supply polarity is reversed for the circuit in question
        (c). The drain, rather than the source, is placed at signal ground
        (d). The output is taken from the source, rather than from the drain.

[128] Secondary breakdown occurs in
        (a). MOSFET but not in BJT
        (b). Both MOSFET and BJT
        (c). BJT but not in MOSFET
        (d). None of these

[129] In a transistor
        (a). $\beta = \alpha/(\alpha+1)$
        (b). $\beta = \alpha/(1-\alpha)$
        (c). $\alpha = \beta/(\beta-1)$
        (d). $\alpha = (\beta+1)/\beta$

[130] In a multi-stage RC coupled amplifier the coupling capacitor_____
        A) Limits the low frequency response
        B) Limits the high frequency response
        C) Does not affect the frequency response
        D) Block the DC component without affecting the frequency response

DIGITAL ELECTRONICS

[1] It is required to construct a counter to count upto 100(decimal). The minimum number of flipflops required to construct the counter is
        A. 8
        B. 7
        C. 6
        D. 5

[2] The gate that assumes the 1 state, if and only if the input does not take a 1 state is calle**D**........
        A. AND gate
        B. NOT gate
        C. NOR gate
        D. Both b and c