The depletion N-channel MOSFET

A.Can be operated as a JFET with zero gate voltage
B.Can be operated as an enhancement MOSFET by applying +ve bias to gate
C.Can be operated as an enhancement MOSFET by applying -ve bias to gate
D.Cannot be operated as an enhancement MOSFET

B.Can be operated as an enhancement MOSFET by applying +ve bias to gate

MOSFET has greatest application in digital circuit due to

A. Low power consumption
B. Less noise
C. Small amount of space it takes on a chip
D. All of the above

A.Low power consumption

The enhancement N-channel MOSFET

A.Cannot be operated as an enhancement MOSFET
B.Can be operated as a JFET with zero gate voltage
C.Can be operated as an enhancement MOSFET by applying -ve bias to gate
D.Can be operated as an enhancement MOSFET by applying +ve bias to gate

A.Cannot be operated as an enhancement MOSFET

The MOSFET stands for

A. Metal oxidized selenium FET
B. Metal oxide surface FET
C. Metal oxide semiconductor FET
D. Metal of surface FET

C.Metal oxide semiconductor FET

The enhancement MOSFET is

A.Normally of MOSFET
B.Useful as a very good constant voltage source
C.Widely used because of easy in its fabrication
D.Normally on MOSFET

A.Normally of MOSFET

In MOSFETs N-channel is more preferred than P-channel because

A. It is cheaper
B. It is faster
C. It has better drive capability
D. It has better noise immunity

B.It is faster

The MOSFET is almost ideal as switching device because

A. It has longer life
B. It works progressively
C. It consumes low power
D. It has linear characteristics

C.It consumes low power

IGFET is a ..... device

A.Linear
B.Logarithmic
C.Half power
D.Square law

D.Square law

The main types of field effect transistor are

A.BJT and FET
B.UJT and FET
C.JFET and MOSFET
D.None of the above

C.JFET and MOSFET

The input gate current of a FET is

A. A few micro-amperes
B. A few mili-amperes
C. A few amperes
D. Negligible

D.Negligible

The transistor can be operated in

A. Active region
B. Saturation region
C. Cut-off region
D. All of the above regions

D.All of the above regions

The arrow in a transistor terminal represents

A. Emitter
B. Collector
C. Base
D. None of the above

A.Emitter

A transistor is said to be operating in the cut-off region if

A. Emitter junction is forward biased and collector junction is forward biased
B. Emitter junction is reverse biased and collector junction is reverse biased
C. Emitter junction is reverse biased and collector junction is forward biased
D. Emitter junction is forward biased and collector junction is reverse biased

B.Emitter junction is reverse biased and collector junction is reverse biased

1) Name the filter that has two stop bands?
   a) Band-pass filter
   b) Low pass filter
   c) High pass filter
   d) Band-reject filter

1) What is a filter?
   a) Frequency selective circuit
   b) Amplitude selective circuit
   c) Frequency damping circuit
   d) Amplitude damping circuit

1) What are filters created by using resistors and capacitors or inductors and capacitors called?
   a) Active filters
   b) Passive filters
   c) Continuous filters
   d) Differential filters

1) How will be the output voltage obtained for an ideal op-amp?
   a) Amplifies the difference between the two input voltages
   b) Amplifies individual voltages input voltages
   c) Amplifies products of two input voltage
   d) None of the mentioned

1) Find the input voltage of an ideal op-amp. It’s one of the inputs and output voltages are 2v and 12v. (Gain=3)
   a) 8v
   b) 4v
   c) -4v
   d) -2v

1) Op-amps used as high- and low-pass filter circuits employ which configuration?

A. noninverting

B. comparator

C. open-loop

D. inverting

1) Which concept states that if one input terminal of an op-amp is at zero potential, then the other one also will be at zero potential?

a. Virtual short

b. Virtual ground

c. Zero input current

d. None of the above

1) For an Op-amp with negative feedback, the output is …….

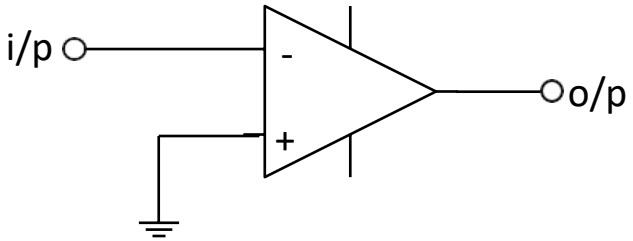
A) equal to the input

B) increased

C) fed back to the inverting input

D) fed back to the noninverting input

1. If the input to the circuit of figure is a sine wave the output will be



a. A half wave rectified sine wave

b. A full-wave rectified sine wave

c. A triangular wave

d. A square wave

Ans. (d)

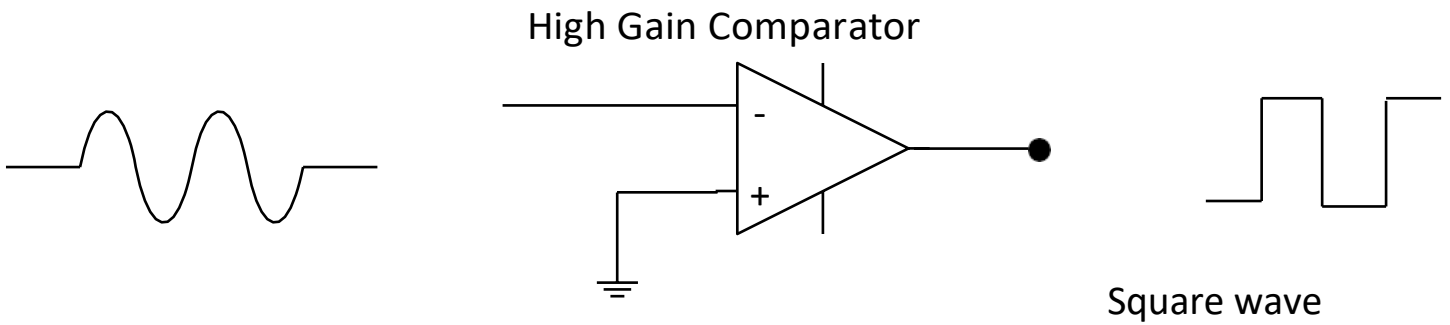
Explanation: - The op-amp is in open-loop so it will work as comparator. The circuit shown here is a zero crossing detector a special case of comparator. When the input is above ground level, the output is saturated at its negative maximum and when the input is below ground, the output is at its positive maximum.

1. One input terminal of high gain comparator circuit is connected to ground and a sinusoidal voltage is applied to the other input. The output of comparator will be
   a. a sinusoid
   b. a full rectified sinusoid
   c. a half rectified sinusoid
   d. a square wave

[GATE-1998: 1 Mark]

Ans. (d)

Explanation: - When positive cycle of input is applied to inverting terminal output is saturated to its negative maximum. When negative cycle is applied output goes to the positive maximum value. So output is square wave.



1. The most commonly used amplifier in sample and hold circuit is
   a. a unity gain inverting amplifier
   b. a unity gain non inverting amplifier
   c. an inverting amplifier with a gain of 10
   d. an inverting amplifier with a gain of 100

   [GATE-2000: 1 Mark]

Ans. (b)

Explanation: - The most commonly used amplifier in sample and hold circuit is a unity gain non inverting amplifier. Since the polarity and amplitude of the samples have to remains same.

1. The ideal Op – Amp has the following characteristics. a. $R_i = \infty$, $A = \infty$, $R_0 = 0$

   b. $R_i = 0$, $A = \infty$, $R_0 = 0$

   c. $R_i = \infty$, $A = \infty$, $R_0 = \infty$

   d. $R_i = 0$, $A = \infty$, $R_0 = \infty$ **[GATE-2000: 1 Mark]**

Ans. (a)

Explanation: - An ideal op-amp has infinite voltage gain, infinite input resistance and zero output resistance.