# Principles of Electronic Communication Systems 4th Edition Frenzel Test Bank Full Downloa C: http://testernloi2.Test BankK: Electronic Fundamentals for frenzel-test-Communications <u>KEY</u>

1. Gain means attenuation.

# **FALSE**

Blooms: 3. Apply Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

2. Circuits that introduce attenuation have a gain that is less than 1.

# TRUE

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

3. The gain or loss of a circuit is usually expressed in volts (V).

# FALSE

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

4. When a decibel value is computed by comparing a power value to 1 mW, the result is a value called the dBm.

**TRUE** 

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

2-1

5. Both coils and capacitors offer an opposition to alternating current flow known as resistance.

# FALSE

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

6. The basic unit of inductance is the henry.

# **TRUE**

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

 The tendency of electrons flowing in a conductor to flow near and on the outer surface of a conductor at very high frequencies is called skin effect.

# TRUE

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

8. Resonance in a series tuned circuit is the point at which XL equals XC.

# TRUE

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications 9. The bandwidth of a resonant circuit defines its selectivity.

# TRUE

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

10.

The bandwidth of a circuit is directly proportional to Q.

# **FALSE**

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

11.

A frequency-selective circuit designed to pass some frequencies and reject others is a(n)

#### Α.

tank circuit

# <u>B.</u>

filter

#### C.

harmonic circuit

#### D.

frequency doubler

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

12. A circuit that rejects or stops frequencies over a narrow range but allows frequencies above and below to pass is

#### Α.

high-pass filter

#### Β.

bandpass filter

#### <u>C.</u>

band-reject filter

#### D.

all-pass filter

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

#### 13.

The signal attenuation in the passband of a filter is called

# <u>A.</u>

insertion loss

#### Β.

roll-off loss

#### C.

notch loss

#### D.

impedance

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications 14. Which of the following is also known as a notch filter?

#### Α.

low-pass

#### Β.

high-pass

# C.

bandpass

# <u>D.</u>

band-reject

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

15. The rate of change of amplitude with frequency in a filter is the

# Α.

shape factor

# <u>B.</u>

roll-off

# C.

insertion loss

#### D.

attenuation

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

#### 16.

O. Which of the following, also known as a Thomson filter, provides the desired frequency response but has a constant time delay in the passband?

#### Α.

Butterworth

#### В.

Chebyshev

#### C.

Cauer

# <u>D.</u>

Bessel

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

# 17.

Which of the following is not an advantage of an active filter?

#### Α.

gain

# Β.

easy to tune

# <u>C.</u>

use of inductors

#### D.

isolation

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications 18. Which of the following filter is used to supply signals on exact frequencies with good stability?

#### Α.

RC low-pass

#### В.

Bessel

# <u>C.</u>

crystal

# D.

LC notch

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

19. Which of the following filter is very small and inexpensive and widely used in communication transmitters and receivers?

# Α.

Bessel

# В.

Butterworth

# C.

LC

# <u>D.</u>

ceramic

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications 20. Which of the following is a fixed tuned bandpass filter that is designed to provide the exact selectivity required by a given application?

Α.

Bessel

#### <u>B.</u>

surface acoustic wave

#### C.

switched capacitor filters

# D.

ceramic

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

The primary advantage of <u>SCFs</u> is that they provide a way to make tuned or selective circuits in an IC without the use of discrete inductors, capacitors, or resistors.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

22. One characteristic of the commutating filter is that it is sensitive to the <u>harmonics</u> of the center frequency for which it is designed.

> Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.03 Filters Subtopic: Filters Topic: Electronic Fundamentals for Communications

23.

A non-sine wave approach used to determine the characteristics and performance of any communication circuit or system is **Fourier** analysis.

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.04 Fourier Theory Subtopic: Fourier Theory Topic: Electronic Fundamentals for Communications 24. Most signals and waveforms discussed and analyzed are expressed in the time domain.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.04 Fourier Theory Subtopic: Fourier Theory Topic: Electronic Fundamentals for Communications

25. The bandwidth of a rectangular wave is equal to 0.35 divided by <u>rise</u> time.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Hard Section: 02.04 Fourier Theory Subtopic: Fourier Theory Topic: Electronic Fundamentals for Communications

26. When two or more stages of amplification are cascaded, the overall gain of the combination is the <u>product</u> of the individual circuit gains.

> Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

27. <u>Attenuation</u> refers to a loss introduced by a circuit or component.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

28.

When gain is converted to decibels, the overall gain of an electronic circuit can be computed by <u>adding</u> the individual gains expressed in decibels.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications

29.

When a decibel value is computed by comparing a power value to 1 mW, the result is a value called the dBm.

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.01 Gain, Attenuation, and Decibels Subtopic: Gain, Attenuation, and Decibels Topic: Electronic Fundamentals for Communications Circuits made up of inductors and capacitors that resonate at specific frequencies are called <u>tuned</u> circuits.

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

31. The reactance of a capacitor is **inversely** proportional to the value of capacitance and operating frequency.

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

32. A(n) **inductor** also called a coil or choke is simply a winding of multiple turns of wire.

Blooms: 1. Remember Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

33.

An important characteristic of an inductor is the ratio of inductive power to resistive power referred to as its <u>quality</u> factor.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Medium Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

34. When the inductive and capacitive reactances are equal, <u>resonance</u> occurs.

Blooms: 2. Understand Chapter: 02 Electronic Fundamentals for Communications Difficulty: Easy Section: 02.02 Tuned Circuits Subtopic: Tuned Circuits Topic: Electronic Fundamentals for Communications

35.

The **bandwidth** of a tuned circuit is defined as the difference between its upper and lower cutoff frequencies.

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