Chapter 02 Test Bank: Electronic Fundamentals for Communications KEY

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
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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

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
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7. 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 X_L equals X_C.

TRUE

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

A. tank circuit

B. 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 the

A. high-pass filter

B. bandpass filter

C. band-reject filter

D. all-pass filter

Blooms: 1. Remember
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Hard
Section: 02.03 Filters
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13. The signal attenuation in the passband of a filter is called

A. insertion loss

B. roll-off loss

C. notch loss

D. impedance

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

A. low-pass

B. high-pass

C. bandpass

D. band-reject

Blooms: 2. Understand
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Medium
Section: 02.03 Filters
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15. The rate of change of amplitude with frequency in a filter is the

A. shape factor

B. roll-off

C. insertion loss

D. attenuation

Blooms: 2. Understand
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Medium
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Topic: Electronic Fundamentals for Communications

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

A. Butterworth

B. Chebyshev

C. Cauer

D. Bessel

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

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

A. gain

B. easy to tune

C. 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?

A. RC low-pass

B. Bessel

C. 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?

A. Bessel

B. Butterworth

C. LC

D. ceramic

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

A.
Bessel

B.
surface acoustic wave

C.
switched capacitor filters

D.
ceramic

Blooms: 1. Remember
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Hard
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21. The primary advantage of **SCFs** 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
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22. One characteristic of the commutating filter is that it is sensitive to the **harmonics** of the center frequency for which it is designed.

Blooms: 1. Remember
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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 **rise** 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 **product** of the individual circuit gains.

Blooms: 2. Understand
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Difficulty: Medium
Section: 02.01 Gain, Attenuation, and Decibels
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27. **Attenuation** 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
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28. When gain is converted to decibels, the overall gain of an electronic circuit can be computed by **adding** the individual gains expressed in decibels.

Blooms: 2. Understand
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Difficulty: Easy
Section: 02.01 Gain, Attenuation, and Decibels
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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
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30. Circuits made up of inductors and capacitors that resonate at specific frequencies are called **tuned** circuits.

Blooms: 1. Remember
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Easy
Section: 02.02 Tuned Circuits
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31. The reactance of a capacitor is **inversely** proportional to the value of capacitance and operating frequency.

Blooms: 1. Remember
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Difficulty: Easy
Section: 02.02 Tuned Circuits
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32. A(n) **inductor** also called a coil or choke is simply a winding of multiple turns of wire.

Blooms: 1. Remember
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33. An important characteristic of an inductor is the ratio of inductive power to resistive power referred to as its **quality** factor.

Blooms: 2. Understand
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Medium
Section: 02.02 Tuned Circuits
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34. When the inductive and capacitive reactances are equal, **resonance** occurs.

Blooms: 2. Understand
Chapter: 02 Electronic Fundamentals for Communications
Difficulty: Easy
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35. The **bandwidth** of a tuned circuit is defined as the difference between its upper and lower cutoff frequencies.

Blooms: 1. Remember
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