RF Fundamentals – Quiz

Take the Challenge!

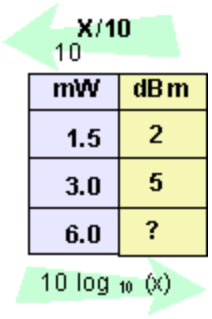
Print this and answer the questions below. If you miss more than 3, then you are a good candidate for this course.

1. Microwave signals usually transfer an electromagnet spectrum with a high wave length.
a. True
b. False

2. If PdBm = 10log (Vrms2 x 20), what is the power when Vpk = 0.3V?
a. ~ -0.7 dBm
b. ~ -0.5 dBm
c. ~ 0.7 dBm
d. ~ 0.5 dBm

3. S-Parameter test is equivalent to continuity (contact) test in Digital world.
a. True
b. False

4. Referring to the table below, what is the power in dBm for 6mW?



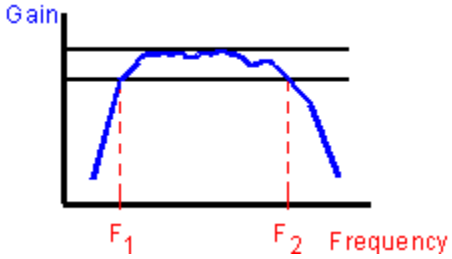
a. 7 dBm
b. 8 dBm
c. 8 dBm
d. 10 dBm

5. A 20dB pad also refers to
a. 20dB gain
b. 20dB attenuator
c. 20 dB loss
d. 20dB reflection

6. During characterization, suppose we get two readings from the same test of a device that varies by 3dBm. Is this acceptable?
a. Yes
b. No

7. A S21 parameter for a two-port network is also known as:
a. forward voltage-gain
b. reserve transfer coefficient
c. input reflection coefficient
d. All the above

8. Smith Chart was traditionally used to:
a. solve lengthy complex equation graphically on the chart
b. reduce the possible errors encountered during manual calculations
c. translate the reflection coefficient into impedance
d. All the above



9. The gain measurement plot on the chart below can be used to determine
a. 3dB bandwidth
b. Minimum passband gain
c. Gain flatness
d. All the above

10. Usually the P1dB test is done after the regular gain test.
a. True
b. False

11. Mixer are used to:
a. convert one frequency to power at another frequency
b. provide harmonic signals
c. create multitone signals

12. Third Order Intercept Point (IP3) cannot be measured. Why?

13. Why is the ACPR test important for RF devices used in communication systems?

14. What is function of the frequency synthesizer in an ATE machine?

15. How might the test results be changed if there is an impedance mismatch on a RF circuit?

RF Fundamentals – Quiz Answers

1. b. False
2. b. ~ -0.5dBm
3. a. True
4. c. 8dBm
5. b. 20dB attenuator
6. b. No
7. a. forward voltage-gain
8. d. all the above
9. d. all the above
10. a. True
11. a. convert one frequency to power at another frequency
12. It is an extrapolated point, calculated based on third-order intermodulation product.
13. It indicates the distortion from the adjacent signals.
14. A synthesizer provides the carrier frequency for any RF signal.
15. An impedance mismatch will cause reflection in the circuitry. This will result in in-correct stimulus to the device or in-correct measurement.