King Fahd University of Petroleum and Minerals

University Diploma Programs
Electronic Equipment Maintenance
EET-029: Introduction to Communications
Quiz # 4

Name: _____ **ID #**: _____

1. Indicate the false statement regarding the Armstrong modulation system:

   (a) The system is basically phase, not frequency, modulation
   (b) AFC is not needed, as a crystal oscillator is used
   (c) Frequency multiplication must be used
   (d) Equalization is unnecessary

2. An FM signal with a modulation index m_f passed through a frequency tripler. The wave in the output of the tripler will have a modulation index of:

   (a) $m_f / 3$
   (b) m_f
   (c) $3\ m_f$
   (d) $9\ m_f$

3. Since noise phase-modulates the FM wave, as the noise sideband frequency approaches the carrier frequency, the noise amplitude:

   (a) Remains constant
   (b) Is decreased
   (c) Is increased
   (d) In equalized

4. One of the following is an indirect way of generating FM. This is the:

   (a) Reactance FET modulator
   (b) Varactor diode modulator
   (c) Armstrong modulator
   (d) Reactance bipolar transistor modulator

5. In an FM stereo multiplex transmission, the:

   (a) Sum signal modulates the 19 kHz subcarrier
   (b) Difference signal modulates the 19 kHz subcarrier
   (c) Difference signal modulates the 38 kHz subcarrier
   (d) Difference signal modulates the 67 kHz subcarrier

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6. Indicate which of the following statements about the advantage of the phase discriminator over the slope detector is false:

    (a) Much easier alignment
    (b) Better linearity
    (c) Greater limiting
    (d) Fewer tuned circuits

7. Show which of the following statements about the amplitude limiter is untrue:

    (a) The circuit is always biased in class C, by virtue of the leak-type bias
    (b) When the input increases past the threshold of limiting, the gain decreases to keep the output constant
    (c) The output must be tuned
    (d) Leak-type bias must be used.

8. A pre-emphasis circuit provides extra noise immunity by:

    (a) Boosting the bass frequencies
    (b) Amplifying the higher audio frequencies
    (c) Preamplifying the whole audio band
    (d) Converting the phase modulation to FM.

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