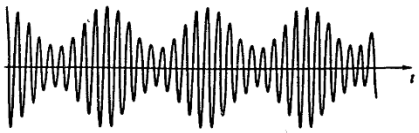
1. Convolution codes covered in the syllabus work on:
   A. Individual bits
   B. Group of bits

2. Convolution codes work on bit stream:
   A. True
   B. False

3. Number of users supported by TDMA is more than that for FDMA
   A. True
   B. False
   C. Cannot be determined from the given information

4. Reducing the transmission power can
   A. Increase number of users for the same bandwidth
   B. Increase number of users for the same bandwidth provided new transmitters are installed to proportionately reduce distance between transmitters
   C. Causes a drop in number of users that can be supported
   D. Transmission power has nothing to do with number of users in TDMA, FDMA, SDMA

5. The image shows



   A. Message wave
   B. Carrier wave
   C. Amplitude-modulated wave
   D. Frequency-modulated wave
   E. Phase-modulated wave

6. Varactor diode is used for demodulating
   A. Amplitude-modulated signal
   B. QAM signal
   C. BPSK-signal
   D. Phase-modulated signal

7. If signal has 17 time points mapped to -1000 and 900 mapped between 2 and 3, the best non-uniform 8-bit quantization is
   A. 1111 1111 mapped to -1000, 3 is mapped to 1010 1010, discretization error when signal value is 3, is 0

B. 0000 0000 mapped to -1000, max discretization error is 0.0039

C. Discretization error is lower for uniform quantization than for non-uniform quantization

8. Nyquist criteria applies to

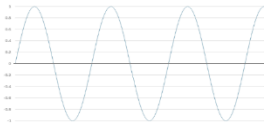
A. Continuous time signals

B. Discrete time signals

C. Both – but limited to sound signals only

D. Both

9. A sine wave is shown. How many zero crossings it has



A. 1

B. 2

C. 4

D. 6

E. 10

10. CRC-5 is used as an ECC code for USB tokens. CRC-15 is used as an ECC code for data within the USB. When data must be sent from USB drive to hard disk the packet must comprise of:

A. USB token---Remainder from polynomial XOR division of USB token by CRC-5

B. USB token---Remainder from polynomial XOR division of USB token by CRC-5---USB Message---Remainder from polynomial XOR division of USB message by CRC-15

C. Depends on whether quotient in each division is ≥ 1

11. 1 kilobyte of message is sent in packet size of 4 bytes using Hamming(8,4). How many packets are needed to send the message?

A. Cannot be determined from the given information

B. 256

C. 512

D. 1024

12. In binary pulse shift keying (BPSK), under ideal conditions, the number of message signals that can be supported is independent of whether the two carriers are antipodal or orthogonal.

A. True

B. False

C. Depends on whether it is a broadcast or a one-to-one communication