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1) The desired signal of maximum frequency wm centered at frequency w=0 may be recovered if

a. The sampled signal is passed through low pass filter
b. Filter has the cut off frequency wm
c. Both a and b
d. None of the above

2) A distorted signal of frequency fm is recovered from a sampled signal if the sampling frequency fs is

a. fs > 2fm
b. fs < 2fm
c. fs = 2fm
d. fs ≥ 2fm

3) Calculate the minimum sampling rate to avoid aliasing when a continuous time signal is given by $x(t) = 5 \cos 400\pi t$

a. 100 Hz
b. 200 Hz
c. 400 Hz
d. 250 Hz

4) Calculate the Nyquist rate for sampling when a continuous time signal is given by
$x(t) = 5 \cos 100\pi t + 10 \cos 200\pi t - 15 \cos 300\pi t$

a. 300Hz
b. 600Hz
c. 150Hz
d. 200Hz

5) A low pass filter is

a. Passes the frequencies lower than the specified cut off frequency
b. Rejects higher frequencies
c. Is used to recover signal from sampled signal
d. All of the above

6) The techniques used for sampling are

a. Instantaneous sampling
b. Natural sampling

c. Flat top sampling
d. All of the above

7) The instantaneous sampling

a. Has a train of impulses
b. Has the pulse width approaching zero value
c. Has the negligible power content
d. All of the above

8) The sampling technique having the minimum noise interference is

a. Instantaneous sampling
b. Natural sampling
c. Flat top sampling
d. All of the above

9) Types of analog pulse modulation systems are

a. Pulse amplitude modulation
b. Pulse time modulation
c. Frequency modulation
d. Both a and b

10) In pulse amplitude modulation,

a. Amplitude of the pulse train is varied
b. Width of the pulse train is varied
c. Frequency of the pulse train is varied
d. None of the above