Post-quiz:

The following questions will help us evaluate the effectiveness of the J-DSP collaborative simulations software in teaching signal processing concepts. The questions are related to the concepts used in the sample exercises. Please choose the most appropriate answer.

1. **A pole in a system's transfer function tends to create**

   a) a peak in the frequency response magnitude plot

   b) a valley in the frequency response magnitude plot

   c) both (a) and (b)

   d) none of the above

2. **The output of an LTI system is its impulse response when the input of the system is**

   a) a delta signal

   b) an impulse signal

   c) Both (a) and (b)

   d) None of the above

3. **A pole placed exactly on the unit circle (in z-plane) results in**

   a) a stable system

   b) an unstable system

   c) a time invariant system

   d) none of the above

4. **An unstable system with a pole located at (x,y) in the z-domain can be made stable by placing**

   a) another pole at (x,-y)

   b) a zero at (x,y)

   c) another pole at (-x,-y)

   d) a zero at (-x,-y)

5. **The peak in the magnitude frequency response of a filter system with single pole P_1 in its transfer function can be narrowed by**

a) introducing a zero at the same location as that of P_1

b) moving P_1 away from the unit circle

c) moving P_1 closer to the unit circle

d) none of the above

6. **Peak picking or picking a few largest components in the frequency domain version of a signal to reconstruct the time domain signal is based on the**

a) Cauchy-residue theorem

b) Parseval's theorem

c) Sampling theorem

d) none of the above

7. *F* **is the frequency domain version of the speech signal** *S*. **If** *F* **consists of** *N* **components, which one of the following options when used to reconstruct** *S*, **would result in better speech quality?(note** *n <* *N*)

a) the largest *n* components of *F*

b) the first *n* components of *F*

8. **In question 7, if** *F* **contained** *256* **components, which one of the following options when used to reconstruct** *S*, **would result in best speech quality**

a) first *8* components

b) highest *8* components

c) highest *64* components

d) first *64* components

9. **The Peak-picking analysis-synthesis process cannot be used to compress speech signals**

a) True

b) False