Quiz Instructions

Please select the best answer for each question. You may look back at notes and lectures, but only get one chance to do the quiz.

<table>
<thead>
<tr>
<th>Question 1</th>
<th>1 pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the main function of the gradients?</td>
<td></td>
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<tr>
<td>☐ Spoiling</td>
<td></td>
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<tr>
<td>☐ Polarizer</td>
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<tr>
<td>☐ Exciter</td>
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<tr>
<td>☐ Spatial encoding</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Question 2</th>
<th>1 pts</th>
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<tbody>
<tr>
<td>Gradients can create a spatial gradient in:</td>
<td></td>
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<tr>
<td>☐ Tissue heating</td>
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<tr>
<td>☐ Flip angle</td>
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<tr>
<td>☐ Frequency or phase</td>
<td></td>
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<tr>
<td>☐ Spin polarization</td>
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</table>
### Question 3

Spatial encoding for 2D MRI typically requires:

- Frequency, then phase, then slice encoding.
- Slice, then phase, then frequency encoding.
- Phase, then slice, then frequency encoding.

### Question 4

The small tip angle approximation does not...

- Assume Mz is constant.
- Assume Mxy is constant.
- Tell us how to define the slice select gradient.
- Tell us how to define B1E.

### Question 5

The MRI signal equation...

- Relates T2 to the signal amplitude.
- Relates T1 to the signal amplitude.
- Relates Mz and spatial encoding to the acquired signals.
Relates Mxy and spatial encoding to the acquired signals.

### Question 6

A point in k-space represents…

- The T2 of the tissue.
- The T1 of the tissue.
- The presence or absence (amount) of protons in the object being imaged.
- The presence or absence (amount) of a particular spatial frequency in the object being imaged.

### Question 7

Phase encoding is not…

- Adding a linear spatial variation of phase across the object.
- Applying several phase encode steps per echo.
- After excitation and before readout.
- Repeated once per TR with a different amplitude.

### Question 8

Frequency encoding is not…
- Required to excite spins.
- Adding a linear spatial variation of frequency across the object being imaged.
- Played after other gradients or RF.
- Constant magnitude for Cartesian imaging