Lecture 8 Quiz

ⓘ This is a preview of the published version of the quiz

Started: Apr 28 at 7:13pm

Quiz Instructions

Please choose the best answer

Question 1 — 1 pts

An spin-echo refers to refocusing of

- ◯ Both T1 and T2 decay
- ◯ T2 decay
- ◯ T2' decay
- ◯ T1 decay

Question 2 — 1 pts

Spin-echo sequences can easily provide which of the following contrasts

- ◯ None of these
- ◯ T2 weighting
- ◯ All of these
- ◯ T2 weighting
- ◯ Proton-density weighting

Question 3

1 pts

Slice interleaving is a useful technique that provides

- Improved time-efficiency when TR long enough to image additional slices while magnetization from once slice recovers
- Improved T1 contrast by increasing the TR
- Improved T2 contrast by using longer echo trains
- Reduced SAR by imaging additional slices while the magnetization from one slice reverse

Question 4

1 pts

T1 and T2 weighted imaging use, respectively

- Short TR and TE, and long TR and TE
- Short TR and short TE, and Long TR and short TE
- Long TR and TE, and short TR and TE
- Long TR and short TE, and Short TR and short TE

Question 5

1 pts

For a T1-weighted spin-echo sequence, assuming TR > 2T2, how many repetitions of the sequence are needed to establish a steady state?

- Approximately TR/T1
- One repetition
- No repetitions
- Approximately 2TR/T1

Question 6

1 pts

Spin-echo trains have the advantages of

- All of these
- Reduced SAR and imaging time compared to single-echo spin-echo sequences
- Offering ability to form images with different TE times efficiently
- Offering both PD and T2 contrast
- None of these

Question 7

1 pts

Why is it of interest to image with reduced refocusing flip angles (less than 90 degrees)?

- All of these
- None of these
- Reduced flip angles can length the exponential decay
- It is difficult to achieve exactly 180 degrees due to tuning
- Reduced flip angles use less RF power and reduce SAR

Question 8 — 1 pts

CPMG is useful because

- ◯ It is immune to eddy-current effects
- ◯ It dramatically improves signal level when the refocusing angle is a perfect 180 degrees.
- ◯ It completely avoids oscillation of signal
- ◯ It maintains fairly smooth and high signal even when refocusing flip angles are reduced

Question 9 — 1 pts

A CPMG sequence uses 100-degree refocusing pulses that flip about Mx, all the same sign. The best stabilization pulse to use as the first refocusing RF pulse for this sequence is

- ◯ 140 degrees, about Mx
- ◯ 140 degrees, about My
- ◯ 100 degrees, about My
- ◯ 100 degrees, about Mx

Question 10 — 1 pts

A CPMG sequence has 7 echoes. The first 3 refocusing pulses are 90x, 120y, and 60x. To obtain the maximum signal on the 7th echo, the remaining refocusing

pulses and angles should be:

- ◯ 180y, -90x, -120y and -60x
- ◯ 180y, 60x, 120y and 90x
- ◯ 180y, -60x, 120y and -90x
- ◯ 180y, 90x, 120y and 60x

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