

PHYS 780 – Quiz 2

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Name: _____

Results: _____

Date: _____

Circle (or highlight) all correct answers for each question. If necessary write your explanation.

1. What is the characteristic frequency of solar acoustic modes which have the highest amplitude?
 - a. 1 mHz
 - b. 3 mHz
 - c. 5 mHz

2. The lowest frequency of observed solar oscillation modes is 0.7 mHz. What is the corresponding period?
 - a. 6 min
 - b. 12 min
 - c. 24 min

3. The oscillation modes with the lowest frequencies observed in the solar ℓ -nu diagrams represent:
 - a. p-modes
 - b. f-modes
 - c. g-modes

4. The depth of the solar convection zone is:
 - a. 10% of the solar radius
 - b. 20% of the solar radius
 - c. 30% of the solar radius

5. The squared Brunt-Vaisala frequency, N^2 , in the bulk of the solar convection zone is:
- a. positive
 - b. negative
 - c. zero
6. What is a typical size of solar supergranules:
- a. 30 km
 - b. 300 km
 - c. 3,000 km
 - d. 30,000 km
 - e. give your number
7. Richard Christopher Carrington determined the solar rotation rate from low latitude sunspots in the 1850s and arrived at 25.38 days for the sidereal rotation period. Estimate:
- a. the Carrington rotation rate in heliographic degrees per day:
 - b. this rotation rate in nHz:
 - c. the corresponding rotation speed in km/s:
8. Sunspots rotate:
- a. Slower than the surrounding plasma
 - b. Faster than the surrounding plasma
 - c. with the same speed