

NAME: _____

DATE: _____

PHYS 1040 Homework #3

1. Why is the Earth not perfectly round?
2. Why is the interior of the Earth hot? How hot is it?
3. How do we know that the Earth has a liquid core?
4. Why is the Earth's inner core solid even though it is hotter than the outer, liquid core?
5. What factors are thought to be responsible for creating the Earth's magnetic field?
6. Flicking your finger against your cheek make a different sound than flicking it against your forehead. How is this similar to studying the interior of the Earth using seismic waves?
7. What formed the lunar maria? Why are they smooth?
8. Why does the moon have no atmosphere?

9. Why is the moon's surface heavily cratered but the Earth is not?
10. Why will an astronaut's footprint on the moon last so long?
11. Scientists think the Earth's core is composed mainly of _____, while the surface is composed mainly of _____.
- (a) silicates, uranium
 - (b) lead, sulfur
 - (c) iron, silicates
 - (d) iron, nickel
 - (e) uranium, nickel
12. Our knowledge of the Earth's core comes from:
- (a) X-ray pictures taken with a powerful device in Russia
 - (b) samples obtained by drilling deep holes
 - (c) analysis of earthquake & seismic waves
 - (d) analysis of material erupted from volcanoes
 - (e) human explorers
13. The large number of craters on the lunar highlands compared to those on the maria is evidence that:
- (a) the surface of the maria is liquid, and craters quickly disappear there
 - (b) the material composing the highlands is very soft and easily cratered
 - (c) the bodies that struck the moon and made the craters were clumped in such a manner that they missed hitting some areas of the moon's surface
 - (d) the maria are much younger than the highlands
 - (e) the maria are much older than the highlands
14. What evidence indicates that the moon lacks a large iron core?
- (a) the moon has a very strong magnetic field
 - (b) the moon always keeps the same side facing the Earth
 - (c) the moon has no atmosphere
 - (d) the moon's average density is about 3.3 grams per cubic cm (similar to that of rock)
 - (e) the moon has so many volcanoes that all the iron in its core has been erupted onto its surface.
15. Why has the moon's interior cooled more than the Earth's?