Astronomy 1000 Practice Exam #1 Spring 2008

1) By definition, a planet is a large body that:
   (a) orbits a star.
   (b) is spherical in shape.
   (c) has cleared out all the debris from its orbit.
   (d) all of the above.
   (e) answers (a) and (b) only.

2) Which of these is NOT a Jupiter-like (i.e., Jovian) planet:
   (a) Jupiter
   (b) Saturn
   (c) Uranus
   (d) Neptune
   (e) Mercury

3) A "minimalist" solar system, i.e., one with just the bare essentials, would consist of:
   (a) the Sun and Jupiter.
   (b) the Jupiter-like planets plus the Kuiper Belt.
   (c) the Jupiter-like planets plus the Earth-like planets.
   (d) the Sun plus the Earth.
   (e) the Sun plus the Kuiper Belt.

4) The claim is that one can find Martian rocks on the surface of Antarctica. How is this possible?
   (a) The rocks were left there by secret Martian space missions in the 1970s.
   (b) Volcanoes on Mars ejected hot gases into the atmosphere, which drifted to Earth and cooled.
   (c) Mars and Earth collided thousands of years ago, leaving Martian debris on the Earth's surface.
   (d) The rocks were blasted off the surface of Mars by meteor impacts and grabbed by Earth's gravity.
   (e) Who knows? It's just a theory anyway.

5) Why are these rocks easily found only at Antarctica?
   (a) The surface of Antarctica is under a thick ice layer. Any rocks you find must have come from space.
   (b) Martian rocks falling into the oceans (70% of the Earth's surface) would never be found.
   (c) Martian rocks falling on ordinary ground (i.e., a field near Atlanta) would not be noticed.
   (d) Rocks from the other planets (i.e., Jupiter or Venus) fall somewhere else on the Earth.
   (e) answers (a), (b), and (c).

6) Consider the planets we've visited so far. From *biggest* to *smallest* they are:
   (a) Mercury, Mars, Venus, Earth, Jupiter.
   (b) Jupiter, Mercury, Mars, Venus, and Earth.
   (c) Jupiter, Saturn, Mars, Mercury, Venus, Earth.
   (d) Jupiter, Earth, Venus, Mars, Mercury.
   (e) Mercury, Mars, Earth, Venus, Jupiter.

7) The composition of Mercury's atmosphere is:
   (a) nearly all carbon dioxide (CO_2).
   (b) 75% hydrogen and 24% helium (like Jupiter's)
   (c) tricky tricky tricky! Mercury does not have an atmosphere!
   (d) 78% Nitrogen, 20% oxygen, 0.8% argon, and trace amounts of H_2O and CO_2.
   (e) mostly water vapor (H_2O) with some hydrogen and helium.

8) Most (70%) of the Earth's surface is covered by:
(a) a crispy deep-fried crust.
(b) the oceans.
(c) dry land.
(d) the mantle.
(e) molten iron & nickel.

9) From the center outward, the correct order for the Earth's interior is:
(a) ozone layer, liquid iron inner-core, solid nickel outer core, mantle, and crust.
(b) solid metal inner-core, liquid metal outer-core, mantle, and crust.
(c) solid metal inner-core, liquid metal outer-core, crust, and ozone layer.
(d) solid rock core, molten rock core, mantle, ozone layer and crust.
(e) liquid metal core, mantle, ozone layer, and crust.

10) For a planet to have a magnetic field, which of the following must be true?
(a) it must rotate fairly rapidly.
(b) it must have moons orbiting it.
(c) it must be a rocky planet (no gas giants, please!)
(d) it must have a liquid metallic layer somewhere inside.
(e) both (a) and (d) must be true.

Answers: 1) *d* 2) *e* 3) *a* 4) *d* 5) *e* 6) *d* 7) *c* 8) *b* 9) *b* 10) *e*