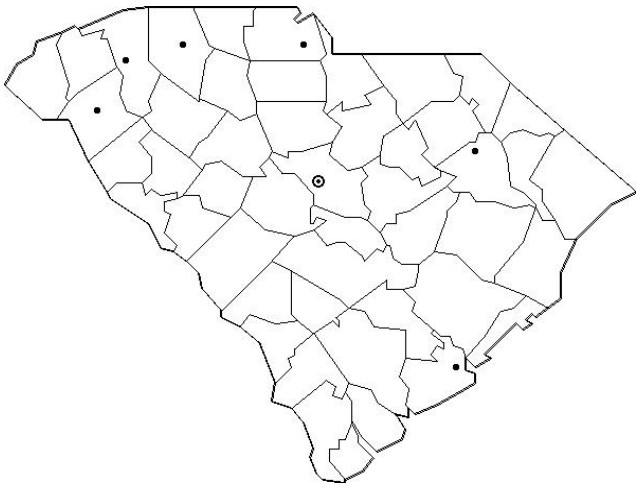
TESTS FOR HIGHER STANDARDS

Science



End of Course Test

FOR THE 2005 SOUTH CAROLINA SCIENCE ACADEMIC STANDARDS
(Support Guide of Aug 2006)

Physical Science

Grade Level Test

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PS-2.1

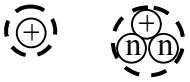
10. What are the positively charged particles in the nucleus of an atom called?

F electrons
G protons
H neutrons
I magnetrons

PS-2.2

11. In which pair of atomic nuclei do both nuclei represent the *same* element?

A



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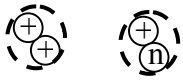

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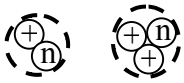

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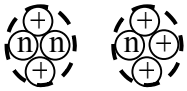
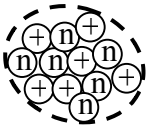


PS-2.4

12. The drawing at right shows a model of the nucleus of a carbon atom. Which statement describes this nucleus accurately?



F This nucleus has an atomic number of 12, an atomic mass of 12, and a charge of +12.
G This nucleus has an atomic number of 12, an atomic mass of 6, and a charge of +6.
H This nucleus has an atomic number of 6, an atomic mass of 12, and a charge of +6.
I This nucleus has an atomic number of 6, an atomic mass of 6, and a charge of 6n.

PS-4.7

31. Jan performed an experiment to demonstrate the Conservation of Matter. In a closed container, she caused methane to combine with oxygen.

$CH4 + 2O2 \rightarrow CO2 + 2H2O$

When she measured the products' total mass, it was slightly less than the mass of the reactants.

What almost certainly did <u>not</u> cause this mass difference?

A The system was not completely closed.
B There were errors in the measurements of the reactant and product masses.
C The container was not completely clean.
D Some of the reactant mass was converted directly into energy.

PS-4.10

32. Which chemical equation is correctly balanced?

F $Na_2O_2 + 2\,H_2O \rightarrow 2\,NaOH + O_2$

G $Na_2O_2 + 2\,H_2O \rightarrow 4\,NaOH + 2\,O_2$

H $Na_2O_2 + 3\,H_2O \rightarrow 4\,NaOH + 2\,O_2$

I $2\,Na_2O_2 + 2\,H_2O \rightarrow 4\,NaOH + O_2$

PS-5.2

13. If a train travels between two cities, A and D, and stops at City B and at City C along the way, how fast does the train travel between City A and City D?

City A		City B		City C		City D
Left 7:30 AM	>	Left 8:30 AM	>	Left 10:30 AM	>	Arrived 12:30 PM
0 miles	>	60 miles	>	190 miles	>	350 miles

F 60.0 miles/hour
G 68.3 miles/hour
H 70.0 miles/hour
I The speed cannot be calculated.

PS-6.2

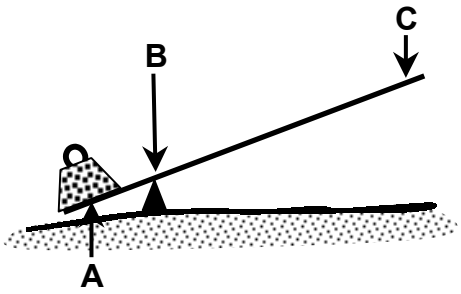
43. A lead weight is dropped and falls a distance before hitting the floor. While the lead weight is falling, Earth's gravity is —

A increasing the kinetic energy of the lead weight.
B decreasing the kinetic energy of the lead weight.
C increasing the potential energy of the lead weight.
D increasing both the potential and kinetic energy of the lead weight.

Use this information to answer the next question.

Consider the lever lifting the weight shown below. The weight is resting on point A; the fulcrum is at point B; and the weight is lifted by applying force downward at point C.

The distance from point A to B is 1 unit. The distance from B to C is 4 units.



PS-6.3

44. About what mechanical advantage does the lever have?

F 0
G 1
H 2
I 4

PS-6.4

45. It takes 3 seconds to lift a 10 kilogram box up to a height of 5 meters. How much power did it take to lift the box?

A 6.7 W
B 16.7 W
C 26.7 W
D 36.7 W

