A Leyden Jar, consists of a piece of foil wrapped around the outside of a glass jar, and another piece of foil lining the inside of a glass jar. The energy stored in a charged Leyden Jar is actually stored:
A) On the metal foil inside the jar.
B) On the metal foil outside the jar.
C) On both the inside and outside foil.
D) Inside the jar itself.
E) In the glass between the foils.
The electric field stores the energy, and the field resides in the glass. In addition the polarization of the molecules (which reduces the field) also stores energy.

Consider a simple capacitor made of a pair of conducting plates in close proximity. Supposed the plates are charged + and -, and then discharged producing a spark. Next the plates are charged again, exactly as they previously were, only this time after they are charged they are pulled further apart. This time the spark that is produced will be:
A) Bigger than the first spark.
B) The same as the first spark.
C) Smaller than the first spark.
D) There won't be any spark.
Pulling the plates apart requires a force working against the electrostatic (attractive) force. This force over the distance that the plates are pulled apart means that you did work, which means the energy went somewhere. It went into the E-field.
You can also look at it as: the charge stays the same, the capacitance is reduced, so the voltage goes up. Stored energy is $U = \frac{1}{2}CV^2 = \frac{1}{2}Q^2/C$, so as C is reduced, U goes up.

The capacitor of a Vandergraaf's generator consists of just a large metal sphere. If the size of the sphere is doubled, the capacitance:
A) Remains the same.
B) Halves.
C) Doubles.
D) Quadruples.
E) Don't know.
For a sphere, $V = \frac{Q}{4\pi\varepsilon_0 R} \Rightarrow C = \frac{Q}{V} = 4\pi\varepsilon_0 R$

To make an extra large spark when discharging a capacitor, one could use several capacitors. Assume that you have 4 capacitors, with a rating of 1 μF at 1000V, and a power supply that can charge them to 1000V.
The biggest spark is obtained when they are all:
A) parallel because C is now 4x.
B) in series because V is now 4x.
C) 2 x 2, 2 sets in series, that in parallel.
D) Makes no difference.
E) Don't know.

Each capacitor at a certain voltage stores a certain amount of energy. Four capacitors store four times as much energy, it does not matter how they are connected.
In parallel, the total capacitance $C_{tot}=4C$, and $V=V_0$, so $U_{tot}=2CV_0^2$, in series $C_{tot}=C/4$, but now $V=4V_0$, so $U_{tot}=1/2*C/4*(4V_0)^2=2CV_0^2$.