



HSAPQ

High School Academic Pyramid Questions

2008-2009
Four Quarter Set

Extra Questions for
Tiebreakers and
Replacements

Extra Tossups:

In the brain, a collection of these is known as the circle of Willis. The popliteal one is found near the knee, while a larger one of these anatomic objects is divided into the celiac trunk, superior mesenteric, and inferior mesenteric. The carotid and subclavian ones are found in the neck, and the pulmonary one is the only one to contain deoxygenated blood. For 10 points, name these blood vessels that carry blood away from the heart.

ANSWER: **arteries** [prompt on blood **vessels** before “popliteal”; do not accept “veins”]

This party saw the defection of the Unionists in 1886 due to the Home Rule plan, and one member of this party, H.H. Asquith, formed a coalition government in 1915. Clement Davies rejected Winston Churchill’s offer to merge this party with Churchill’s party in 1951, and they merged with the Social Democratic Party in 1988. This party’s importance declined following the rise of the Labour Party, and its great leader in the nineteenth century was William Gladstone. For 10 points identify this British political party that rivaled the Conservative party.

ANSWER: **Liberal** Party [do not accept Liberal Democrats, the party produced by the 1988 merger]

BDNF and NGF are examples of growth factors specific to these cells which can bind to Trk receptors. During development, one part of them possesses a “growth cone” and lends its name to a “hillock” where these cells begin to narrow. A solution of silver dichromate was used to dye these cells black by Golgi, and nodes of Ranvier can be found on the long arms of these cells which are covered by a myelin sheath. For 10 points, identify these cells which are used to send messages by the nervous system.

ANSWER: **neurons**

The immediate cause of this conflict was the attempted arrest of the author of the Grand Remonstrance, John Pym. The Putney Debates took place after this conflict, whose first major battle occurred at Edgehill. One side in this conflict was led by the cavalry commander Prince Rupert of the Rhine, who lost the battle of Naseby to the New Model Army. The tide of this war turned after the Battle of Marston Moor, which was won by the forces of Parliament. For 10 points, name this war between the royalists and Oliver Cromwell’s Roundheads.

ANSWER: the **English Civil War**

This nation’s first prince was Alexandru Cuza. Following World War II, this nation was led by Ana Pauker and Gheorghiu-Dej, and this nation’s King Carol II abdicated in 1940, which led to a fascist government under the leadership of the Iron Guard and Ion Antonescu. For 10 points identify this country whose last communist leader, Nicolae Ceausecu, was executed in 1989 after fleeing the capital of Bucharest.

ANSWER: **Romania**

This man used ammonia as a test for the presence of copper in compounds, and developed a thirty-item test for identifying compounds in mineral water. He improved on Otto von Guernicke's vacuum pump and published experiments with it in *The Spring and Weight of the Air*, but may be better known for *The Skeptical Chemist* and a gas law developed after experiments conducted by his assistant, Robert Hooke. For 10 points, name this English scientist best known for a gas law which states that as the pressure of a gas increases, its volume decreases.

ANSWER: Robert **Boyle**

The Iroquois Confederacy was the only North American power present at this meeting. During a meeting on protocol that preceded this event, the Spanish Marquis of Labrador was invited and a Frenchman berated the other participants for nearly two hours. Prussia and Russia divided up the Grand Duchy of Warsaw via this agreement, which was hammered out by representatives like von Hardenberg, Czar Alexander I, and Talleyrand. Chaired by Metternich, for 10 points, name this 1814-15 meeting between Europe's great powers after the Napoleonic Wars.

ANSWER: **Congress of Vienna**

One extinct genus of this phylum hailed from the Tommotian epoch, and is known as *Latouchella*. Caudofauveta and Solenogastres hail from one of its classes, which contains aragonitic sclerites. In addition to *Aplacophora*, another of its classes consists of chiton, and the principal body cavity possessed by members of this phylum is the hemocoel. A visceral mass houses the organs of its members, and many species use the radula to feed. Containing classes of cephalopods and bivalves, for 10 points, name this phylum containing squids and snails.

ANSWER: **Mollusca** [or **mollusks**]

One notable ruler of this place was a member of the Alcmaeonidae line named Megacles, who rivaled the popular tyrant of this city named Peisistratos. One leader bound this city to either ten or one hundred years of reforms, most of which involved repealing the harsh laws of a previous leader. Perhaps this city's most famous ruler led it through the Peloponnesian War and into a "Golden Age." For 10 points name this Ancient Greek city state ruled at various times by Draco, Solon, and Pericles.

ANSWER: **Athens**

Although hydrofluoric acid can be used, an acid of these anions is the preferred etchant of silicon nitride. Salts of these anions are often used as water softeners because they readily complex with magnesium and calcium, as in hydroxyapatite, a major component of bone. Often used in fertilizers, for 10 points, name this biologically important class of ions with general formula P_nO_{3n+1} , the simplest of which is its namesake, PO_4^{3-} .

ANSWER: **phosphates**

Codebreaker Arne Beurling knew the exact date of this before it occurred, and its goal was reaching the A-A line. One of its primary objectives was the Baku Oilfields, and other goals included forcing a peace treaty with Britain. This operation was a betrayal of the Molotov-Ribbentrop pact and met great success until it was halted at Stalingrad. For 10 points name this Nazi blitz of Soviet Russia, named after a medieval Holy Roman Emperor.

ANSWER: Operation **Barbarosa** [or Unternehmen **Barbarossa**; accept descriptive answers such as "**Nazi Germany's invasion of the Soviet Union** in 1940" or equivalents before "Nazi" is read]

Extra Bonuses:

Name these British prime ministers, for 10 points each.

[10] This PM from 1937 to 1940 was criticized for his appeasement policies toward Hitler and for saying that there was “peace for our time.”

ANSWER: Arthur Neville **Chamberlain**

[10] The fall of Chamberlain led to the “return from the wilderness” of this cigar-chomping Conservative politician, who led Britain through the majority of World War II.

ANSWER: Winston **Churchill**

This type of reaction is involved in deposits on pipes when “hard water” flows through them, and in the formation of kidney stones. For 10 points each:

[10] Name this type of reaction, in which several ions or ionic compounds are placed in a solution and an insoluble product appears.

ANSWER: **precipitation** reaction

[10] One solubility rule claims that all compounds with this nitrogen-containing polyatomic cation are soluble.

ANSWER: **ammonium** [or NH_4^+ (N H four plus or N H plus four); do not accept or prompt on “ammonia”]

It was effectively ended on the banks of the Vorskla River, where Charles XII’s army was defeated at Poltava. For 10 points each:

[10] Name this conflict between Russia and Sweden, which was ended by the Treaty of Nystad in 1721.

ANSWER: **Great Northern** War [or **Second Northern** War; prompt on **Northern** War]

[10] This modernizing tsar, in power during the Great Northern War, had earlier gone on a Grand Embassy to Western Europe and faced the Streltsy Uprising.

ANSWER: **Peter the Great** [or **Peter I**; prompt on **Peter**]

The square of the magnitude of this quantity gives the probability density of finding the particle at a given point. For 10 points each:

[10] Identify this function represented by the letter psi.

ANSWER: **wavefunction** [or **state function**]

[10] The solution to this equation, named for a German mathematician, gives the wavefunction of a particle. Its namesake also devised a thought experiment about a cat.

ANSWER: **Schrodinger** equation