



HSAPQ

High School Academic Pyramid Questions

Fall 2008
ACF-Format Set #1

Round 15

Tossups

1. Gouldsmit and Uhlenbeck explained the mathematical theory of this property, which was proposed to account for the doublet spectrum of alkali metals in the Zeeman effect. This property is described by symmetric matrices named for Pauli, and splitting of a beam of silver atoms in the presence of a magnetic field confirmed the quantization of it in the Stern-Gerlach experiment. Also known as intrinsic angular momentum, for 10 points, identify this fourth quantum number, which comes in multiples of one-half and is caused by the rotation of particles about their axes.

ANSWER: spin

2. During this event, a group led by William Smith O'Brien attempted to overthrow the government, but disbanded after a skirmish at Widow McCormack's house. The lowest point during this event occurred during "Black '47," when the Soup Kitchens Act was withdrawn. Those affected by this event often attempted to flee via "coffin boats," and it was exacerbated by absentee landlords. For 10 points, name this 1845 to 1849 event caused by an infestation of the *Phytophthora infestans* blight, a mass starvation on the Emerald Isle.

ANSWER: the Great Famine [or the Irish famine; or the potato famine; or any combination thereof; or Great Hunger; or An Gorta Mor; or An Drochshaol; prompt on famine]

3. In one of his stories, Sukey is given the last spot on an escape boat by the slave Cue. In another, John crosses the Ou-di-son River to investigate "The Place of the Gods," and discovers that the ancient gods are actually humans. In addition to "Freedom's a Hard Bought Thing" and "By the Waters of Babylon," this author included Simon Girty, Thomas Dale, and Edward Teach on a jury another character convinces to rule in favor of Jabez Stone in his case against Mr. Scratch. For 10 points, name this author of *John Brown's Body* and "The Devil and Daniel Webster."

ANSWER: Stephen Vincent Benet

4. This team's top prospects include Will Inman, who was traded from the Brewers. Former Dodgers GM Paul DePodesta blogs about his current involvement with this team. This team received two of its best players in a trade that saw Akinori Otsuka and Adam Eaton swapped to the Rangers for pitcher Chris Young and first baseman Adrian Gonzalez. Playing in pitcher-friendly Petco Park and featuring reigning NL Cy Young winner Jake Peavy, for 10 points, name this baseball franchise whose stars have included Trevor Hoffman and Tony Gwynn.

ANSWER: San Diego Padres [or San Diego]

5. In the 1970s, the Bilger report contradicted the NIH's wishes to disband all research related to this technology, and in the 1980s the NIH gave a grant to Australia's Graham Clark to further develop the multi-channel version of this device. It can be traced back to Volta's description of sensations evoked by electrically stimulating his ears, and current manufacturers include Med-El and Advanced Bionics. Sometimes called the "bionic ear", for 10 points, name this device that restores hearing to deaf people, an implant in the part of the ear containing hair cells.

ANSWER: cochlear implant [accept rough equivalents; do not accept "hearing aid"]

6. These creatures frequently appear in the poems of an author named "He Who Has Put Evil in His Armpit." One kind of these beings could be brought back to life if it was struck again after a fatal blow. A particularly strong kind of them is made of smoke, while another kind have donkey's hooves and comprise the offspring of Iblis. Classes of these mortal but shape-shifting beings include the *marid*, the *si'la*, the *ifrit*, and the man-eating *gul*. For 10 points, name these demons of Arabian folklore, which might be found in magic lamps.

ANSWER: Genies [or Jinn]

7. The first date that the protagonist of this novel remembers is the date of Charles Parnell's death. At the end of the novel, the protagonist asserts "old father, old artificer, stand me now and ever in good stead," and leaves Ireland because Emma calls him a heretic instead of a monk. The title character's life includes many epiphanies, which include Father Arnall's sermon about Hell, and the sight of a woman wading in the ocean, which causes him to devote himself to art. For 10 points, identify this novel about Stephen Daedalus, a work by James Joyce.

ANSWER: A Portrait of the Artist as a Young Man

8. This country controls the exclave of Bashkend in its eastern neighbor, while four spots within this country's borders, including Barkudary, are controlled by that same neighbor. The east-central of this country includes the city of Zod but is dominated by Lake Sevan. Its southeast borders the noncontiguous Nakchivan area, while this country vies for influence in the secessionist Nagorno-Karabakh area of Azerbaijan. Also bordering Georgia, Iran, and Turkey, for 10 points, name this Caucasian republic whose capital is Yerevan.

ANSWER: Republic of Armenia [or Armenia Hayastan; or Hayastani Hanrapetut'yun]

9. A priest interviewed the subjects of this experiment, which ended after Gordon Bower asked the head researcher what its independent variable was. Half of its subjects were repeatedly made to perform pushups and jumping jacks, and wore a stocking cap over their hair, while the other half wore sunglasses and uniforms. It took place in 1971 in the basement of Jordan Hall, and assigned undergraduates the roles of guards or inmates. For 10 points, name this psychological experiment performed by Philip Zimbardo, which simulated a jail at a university in Palo Alto.

ANSWER: Stanford prison experiment

10. He oversaw the issuing of the Statute of Rhuddlan and tried to marry his son off to a Norwegian princess named Margaret for political reasons. Though he successfully occupied Snowdonia, his military accomplishments abroad were less glorious, with the failures that were the Eighth and Ninth Crusades, and he was not numbered the fourth, though he was the fourth English king of his name. Creating for his son the now-traditional title of Prince of Wales, for 10 points, identify this man whose military victories include the Battle of Falkirk against William Wallace.

ANSWER: Edward I [or Edward Longshanks; prompt on Edward]

11. This author of the novels *Lamiel* and *Lucien Leuwen* wrote about Clelia Conti, who helps Gina Pietranera plan the escape of her nephew from the Farnese Tower, in a novel about Fabrizio del Dongo. The protagonist of another of his novels studies under Abbe Pirard at the Bescanon seminary before a letter by Madame de Renal ruins his chance to marry Mathilde de la Mole. For 10 points, name this author of *The Charterhouse of Parma* who wrote about Julien Sorel in *The Red and the Black*.

ANSWER: Stendhal [or Henri-Marie Beyle]

12. Diabetic patients taking metformin may see a buildup of this substance, and that buildup can inhibit phosphofructokinase. Cardiac muscle is highly permeable to this compound, where it is burned as a source of fuel. It can be converted to glucose in the liver by the Cori cycle. It is typically produced from pyruvate in the absence of sufficient oxygen. Common in sour or fermented dairy products like yogurt, for 10 points, identify this metabolic product, mirrored by ethanol in plants, the result of a fermentation pathway.

ANSWER: lactic acid or lactate

13. He developed his ideas while working for the magistrate Piero Soderini; for example, he prevailed on Soderini to use a local militia instead of mercenaries for defense. One of his theoretical works shares a title with a similar book by Sun Tzu, *The Art of War*, and he also advocated the harsh defense of republican government in his *Discourses in Livy*. His magnum opus ends with a directive to free Italy from foreign troops, advises reliance on "virtù," and suggests that it is better to be feared than loved. For 10 points, name this author of *The Prince*.

ANSWER: Niccolò Machiavelli

14. This artist's early works include a realistic depiction of a hat-wearing woman named Rose Beuret. This artist partially defaced his mold for *Saint John the Baptist Preaching* to create his headless statue *The Walking Man*. He was accused of casting from a real body for his lifelike *The Age of Bronze*, while he depicted six dejected nobles with nooses around their necks in *The Burghers of Calais*. For 10 points, name this sculptor whose work *The Gates of Hell* includes his smaller sculptures *The Kiss* and *The Thinker*.

ANSWER: Auguste Rodin

15. In one of this author's novels, Rick Tucker tries to write a biography of an author with stigmata named Wilfred Barclay. In addition to *The Paper Men*, he described Marlan, the leader of a group of homo sapiens who displace Neanderthals in *The Inheritors*, and a sailor who dreams of surviving a shipwreck in *Pincher Martin*. In another of his books, a reprisal for leaving the fire untended leads to the breaking of glasses, and a "snake thing" is feared by Simon, Sam, and Eric. For 10 points, name this author who wrote of Roger and Jack killing Piggy in *Lord of the Flies*.

ANSWER: William Golding

16. The first step of the Leblanc process uses sodium chloride and this substance, a bath of which is used to make rayon filaments. A device known as a Glover tower is used in the lead chamber process to produce this compound, which can also be made in the contact process. Once known as oil of vitriol, it can be described as "fuming" and serve as the electrolyte in lead-acid storage batteries. For 10 points, name this very strong acid with formula H₂SO₄.

ANSWER: sulfuric acid [accept H₂SO₄ before it is read; prompt on oil of vitriol]

17. One cause of this conflict was the deposition of Isabella II of Spain, which led to the candidacy of Leopold of Hohenzollern for the Spanish crown. One side was led by Helmuth von Moltke, who quickly won the battles of Mars-la-Tour and Gravelotte. After an armistice led to the establishment of the Third Republic, the Paris Commune threatened the negotiation of the Treaty of Frankfurt, which granted the victors Alsace and Lorraine. For 10 points, name this conflict, decided by the Battle of Sedan, in which Bismarck antagonized Napoleon III into war.

ANSWER: Franco-Prussian War [or Franco-German War]

18. This composer was the first to write a separate line for the contrabass in an orchestral piece, and his "Wellington's Victory" is also called the "Battle Symphony." He composed the *Grosse Fuge* as the original finale to his string quartet 13, and his symphony in F major includes a fifth movement depicting farmers rejoicing after a thunderstorm. His other symphonies include one whose fourth movement includes a setting of a Schiller poem, as well as one that begins with the notes G-G-G-E flat. For 10 points, name this composer of the *Pastoral* and *Choral* Symphonies.

ANSWER: Ludwig van Beethoven

19. In this case, the Court found that a power to create implies a power to preserve, and it noted that Congress might create a corporation if necessary to execute its powers. The court found that, "The Constitution, when thus adopted, was of complete obligation, and bound the state sovereignties," and William Pinckney and Daniel Webster successfully argued this case. Including the finding that the power to tax implied the power to destroy, for 10 points, name this 1819 Supreme Court decision which held that a state could not tax the Bank of the United States.

ANSWER: McCulloch v. Maryland [or *Maryland v. McCulloch*]

20. The background of this painting features rolling blue hills which are broken by a lone church spire. The companion to *The Olive Trees*, its left foreground depicts a writhing, flame-like cypress tree. It was created a year after a similar painting of the title location "over the Rhone." Painted in a hospital room overlooking the village of Saint-Remy, its upper right corner features a yellow crescent moon. It also features an undulating dark blue sky, which contains eleven of the title objects. For 10 points, name this 1889 painting of the evening sky by Vincent Van Gogh.

ANSWER: *The Starry Night*

21. A dynamical one may be taken by first applying Kepler's third law and the mass-luminosity relation for a binary system. Spectral and luminosity class data are employed with a Hertzsprung-Russell diagram and the distance modulus in the spectroscopic type. Generally, it relies on taking two measurements separated by six months of a star's position, finding the angle that separates them, and relying on the small angle approximation. For 10 points, identify this method of distance determination, whose namesake unit is around three point two six lightyears.

ANSWER: parallax

22. Geoffrey of Monmouth claimed that this man was the grandson of King Cole through his mother Helena, and Lorenzo Valla proved that this man's supposed grant to Pope Sylvester of the lands of Rome, this man's namesake donation, was a fraud. He ended the Tetrarchy at the battle of Milvean Bridge and issued the 313 AD edict of Milan. For 10 points, name this Roman Emperor, the first to convert to Christianity.

ANSWER: Constantine the Great [or Constantine I; or Flavius Valerius Aurelius Constantinus]



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Bonuses

1. This god's mother was a mortal named Semele. For 10 points each:

[10] Name this Greek god of wine.

ANSWER: **Dionysus** [or **Bacchus**; or **Acrotophorus**; or **Acroreites**; or **Oeneus**; or **Dendrites**; or **Bromios**; or **Enorches**; or **Liknites**]

[10] Dionysus was said to have been captured by pirates, whom he converted to these creatures when they jumped off the ship.

ANSWER: **dolphins**

[10] Dionysus became one of the twelve immortals to sit atop Mount Olympus after this goddess of the hearth abdicated her place in order to tend to everyone's fireplaces.

ANSWER: **Hestia** [do not accept "Vesta"]

2. He announced his resignation on August 18. For 10 points each:

[10] Identify this politician, whose opponents included Asif Ali Zardari, the widower of Benazir Bhutto .

ANSWER: Pervez **Musharraf**

[10] Pervez Musharraf led this country, which has had longstanding tensions with India.

ANSWER: **Pakistan**

[10] This opposition leader was the president before being deposed in 1999 by Musharraf and has demanded that Musharraf receive no mercy following his impeachment.

ANSWER: Nawaz **Sharif**

3. Answer the following about the geography of India, for 10 points each.

[10] Most of the southern part of India is elevated on this plateau which is bounded by the Western and Eastern Ghats and contains the Godavari and Krishna Rivers.

ANSWER: **Deccan** Plateau

[10] The course of this Indian river with great religious significance includes some namesake plains and the Sunderbans delta, after which it drains into the Bay of Bengal.

ANSWER: **Ganges** River [or **Ganga** River]

[10] This city on the banks of the River Hooghly is the capital of West Bengal. Its landmarks include the Victoria Memorial and a fort which featured a namesake "Black Hole" incident.

ANSWER: **Kolkata** [or **Calcutta**]

4. It was named by Otto Jespersen. For 10 points each:

[10] Name this linguistic event which took place from the twelfth to the eighteenth century, where the long vowels in English moved upwards.

ANSWER: **Great Vowel Shift**

[10] During the Great Vowel Shift, both I and U became these types of sounds, which are composed of two vowel parts joined together. Examples of them include "face" and "fierce."

ANSWER: **diphthongs**

[10] The Great Vowel Shift caused the word "roote" in the General Prologue to this author's *Canterbury Tales* to shift from an O sound to a U.

ANSWER: Geoffrey **Chaucer**

5. Axel Carpela was the leading advocate of performing this music as its own piece, after it premiered as the final movement of the Press Celebrations Music. For 10 points each:

[10] Name this 1899 tone poem, which became a rallying cry for opposition to Russian rule over a neighboring country.

ANSWER: **Finlandia**

[10] *Finlandia* was composed by this Finnish nationalist composer, who based such works as *Pohjola's Daughter* and *The Swan of Tuonela* on the Finnish national epic, the *Kalevala*.

ANSWER: Johan Julius Christian "Jean" **Sibelius**

[10] Perhaps the American equivalent to Sibelius's musical Finnish nationalism is to be found in this composer of *Rodeo* and *Fanfare for the Common Man*.

ANSWER: Aaron **Copland**

6. This equation is used to calculate the electromotive force of a cell. For 10 points each:

[10] Identify this equation, named for a German chemist, which relates the cell potential to the standard potential and the logarithm of the reaction quotient.

ANSWER: **Nernst** Equation

[10] The oxidation potential for this element and the reduction potential for its cation is arbitrarily set to zero.

ANSWER: **Hydrogen** [or **H**]

[10] One constant in the Nernst equation is approximately 96500 coulombs per mole, and is named after this British physicist.

ANSWER: Michael **Faraday**

7. Identify the following about U.S. Presidential elections in the 1990s, for 10 points each.

[10] Known for claiming that Republican operatives were planning to sabotage his daughter's wedding, this independent won nearly nineteen percent of the popular vote in the 1992 election.

ANSWER: Henry Ross **Perot**

[10] Known for his plaid shirts, this former president of Vanderbilt University and governor of Tennessee failed to win the 1996 Republican primary and is currently a U.S. Senator.

Answer: Lamar **Alexander**

[10] This former Buffalo Bills quarterback and New York congressman was picked to be Bob Dole's running mate in 1996. He had previously served as George H.W. Bush's HUD secretary.

ANSWER: Jack **Kemp**

8. Name these satirists, for 10 points each.

[10] This pretty bitter Roman writer satirized women, effeminate men, emperors, and all of Rome in his *Satires*. He is the namesake of one of two forms of satires, along with Horace.

ANSWER: **Juvenal** [or Decimus Iunius **Iuvenalis**]

[10] This Irish writer wrote *The Battle of the Books* and *A Tale of the Tub* in addition to *A Modest Proposal* and a work about a sailor who visits Glubdubdrib and Lilliput.

ANSWER: Jonathan **Swift**

[10] This Victorian-Era author wrote about Ernest Pontifex in *The Way of All Flesh*. He also satirized most of British society in *Erewhon*.

ANSWER: Samuel **Butler**

9. Name these Alfred Hitchcock films, for 10 points each.

[10] Based on a Daphne du Maurier short story, this film sees residents of Bodega Bay assaulted by the title animals.

ANSWER: *The **Birds***

[10] Starring Jimmy Stewart as a rugged photographer and Grace Kelly as his prissy girlfriend, this movie involves a suspected murder seen by the wheelchair-bound Stewart.

ANSWER: ***Rear Window***

[10] Cary Grant is pursued across the country by agents from a secret organization attempting to recover some microfilm in this movie, featuring a chase across the faces on Mount Rushmore.

ANSWER: ***North by Northwest***

10. He secured power for himself by having large numbers of nobles participate in court life at Versailles instead of fighting each other or the king. For 10 points each:

[10] Identify this French king, the absolute monarch who styled himself the “Sun King.”

ANSWER: **Louis XIV** [prompt on **Louis**]

[10] This man was made sole regent by Anne of Austria after the death of Louix XIII, until Louix XIV was old enough to rule.

ANSWER: Cardinal Jules **Mazarin** [or Giulio Raimondo **Mazzarino**]

[10] Louis XIV issued the Edict of Fontainebleau, which revoked this earlier decree granting some measure of freedom to French Protestants.

ANSWER: Edict of **Nantes**

11. This author of *Before Adam* described the discovery of the Everhard Manuscripts in his dystopian political novel *The Iron Heel*. For 10 points each:

[10] Name this author, who also wrote a novel about Buck delivering the title cry every year at the site where John Thornton was killed.

ANSWER: Jack John Griffith **London**

[10] The naturalistic Captain Larsen goes blind after bringing Humphrey van Weyden aboard the *Ghost* in this Jack London novel.

ANSWER: *The **Sea-Wolf***

[10] Gray Beaver, the dogfighter Beauty Smith, and the California miner Weedon Scott are among the owners of the title dog in this work of Jack London.

ANSWER: ***White Fang***

12. Naturally, it typically occurs very slowly, usually through alpha and beta decay, though it can be artificially induced through collisions with neutrons. For 10 points each:

[10] Identify this process, the splitting of atomic nuclei into smaller nuclei, which often emits energy.

ANSWER: nuclear **fission**

[10] When U-235 undergoes fission, it emits an average of 2.6 neutrons per fission event, implying that it may participate in this kind of reaction.

ANSWER: nuclear **chain reaction**

[10] Used to keep neutrons moving at a slow enough speed to initiate fission, this substance is the most common nuclear moderator—more common than graphite or a related substance.

ANSWER: light **water** [do not accept “heavy water”]

13. For 10 points each, name these battles of the Napoleonic Wars.

[10] Napoleon met his final demise at this 1815 clash which ended the Hundred Days. This battle turned on the late arrival of Prussian general Gebhardt von Blucher.

ANSWER: **Waterloo**

[10] This 1798 naval battle, also known as Aboukir Bay, saw Napoleon’s navy defeated outside the namesake river, leaving a large force stranded.

ANSWER: Battle of the **Nile**

[10] Napoleon was in Egypt because ten days earlier he had won this battle, where his divisional squares trounced the Mamluk forces near Cairo.

ANSWER: Battle of the **Pyramids**

14. He depicted heaps of corpses in the foreground, apparently slain by skeletons, against a scorched countryside in *The Triumph of Death*. For 10 points each:

[10] Identify this painter of *Netherlandish Proverbs* and *Landscape With the Fall of Icarus*.

ANSWER: Pieter **Bruegel** the Elder [or Peasant **Bruegel**]

[10] This Bruegel painting, which represents winter, includes people skating in the right background, and features the title figures returning with their dogs in the left.

ANSWER: **Hunters in the Snow**

[10] This Bruegel painting depicts the building of a Biblical structure. Communication problems seem to be endangering it already, since its sides all appear to be of slightly different construction.

ANSWER: *The* **Tower of Babel**

15. Members of this group fought the Dog Tax War. For 10 points each:

[10] Name this group who fought the Musket Wars after signing the Treaty of Waitangi with the British.

ANSWER: **Maoris**

[10] The vast majority of the Maori live in this country near Australia.

ANSWER: **New Zealand**

[10] The first European to encounter the Maori was this explorer employed by the Dutch East India Company. An island now named for him was originally known as Van Diemen's Land.

ANSWER: Abel Janszoon **Tasman**

16. Named for the spirits it centers around, it is especially prevalent in Haiti. For 10 points each:

[10] Identify this religious tradition, derived from certain West African religious beliefs.

ANSWER: **Voodoo** [or **Voudon**]

[10] This term denotes a spirit of Voodoo. The Ghede are those of the dead, and other types include the Rada and Petro.

ANSWER: **loas**

[10] Because slaveowners wouldn't take kindly to pagan religions, Dambala, a particularly important loa, was syncretized with either Moses or this saint, who got rid of Ireland's snakes.

ANSWER: Saint **Patrick**

17. The AT&T version included instructions like "be done" and many higher level languages allow its code to be inserted inline. For 10 points each:

[10] Identify this second-generation language, whose instructions had a one to one correspondence with instructions in machine language.

ANSWER: x86 **assembly** language

[10] Assembly is currently most popular on the competitive demoscene but was also widely used back when these kinds of programs were less intelligent.

ANSWER: **compilers**

[10] Assembly had these instructions for calling one of a table of functions, which could open files for input or print characters to the screen.

ANSWER: **int**errupts

18. This novel is interspersed with chapters from one of the title character's novels about Yeshua Ha-Nostri and Pontius Pilate. For 10 points each:

[10] Name this Soviet novel which includes a MASSOLIT meeting and Berlioz's decapitation by a streetcar.

ANSWER: *The **Master and Margarita*** [or ***Master i Margarita***]

[10] Name this author of *The Master and Margarita* also wrote about White Russians in Stalin's favorite play, *The Day of the Turbins*.

ANSWER: Mikhail **Bulgakov**

[10] In *The Master and Margarita*, this character takes the form of Woland and comes to Moscow with the cat Behemoth. In an earlier poem, he leads a rebellion against God.

ANSWER: **Satan** [or the **devil**; or clear equivalents]

19. Plenty of authors once served in the army. Answer the following about some of them, for 10 points each.

[10] This commander was promoted to major general after Fort Donelson, but who screwed up at Shiloh. He also wrote *Ben-Hur*.

ANSWER: Lewis "Lew" **Wallace**

[10] This club-footed womanizing British poet died while fighting for Greek Independence. He wrote "The Prisoner of Chillon," "Childe Harold's Pilgrimage," and "Don Juan".

ANSWER: George Gordon Lord **Byron**, 6th Baron Byron

[10] Catherine Barkley dies delivering the stillborn baby of this character, who, like his creator Ernest Hemingway, was wounded following a mortar attack. He appears in *A Farewell to Arms*.

ANSWER: Frederic Henry [accept either or both names]

20. Identify these phyla, for 10 points each:

[10] Also known as flatworms, these organisms lack a coelom, and are triploblastic. Examples include tapeworms.

ANSWER: **platyhelminthes**

[10] This phylum of bilaterally symmetric triploblasts contains such classes as cephalopoda and gastropoda.

ANSWER: **mollusca**

[10] Members of this phylum possess stinging cells called nematocytes. Including sea anemone and jellyfish, this phylum contains classes like Hydrozoa.

ANSWER: **cnidaria**

21. The title character cheats characters like Kastril and Sir Epicure Mammon. For 10 points each:

[10] Name this play about Subtle, who pretends to be able to turn base metals into gold.

ANSWER: *The* **Alchemist**

[10] *The Alchemist* was written by this British playwright of *Every Man in His Humour* and *Volpone*.

ANSWER: Ben **Jonson**

[10] Jonson's poem "To Penshurst" praises the country estate of this author of *Astrophil and Stella*.

ANSWER: Sir Philip **Sidney**

22. Eluviation usually occurs in the E type of these, and the E type is usually lighter in color than the B type. For 10 points each:

[10] Illuvation results in the accumulation of clayey substances in type B of these layers, where soil has characteristic properties.

ANSWER: soil **horizon**

[10] In coniferous forests, the A1 horizon is rich in this decayed organic matter which is rather dark. It is extensively built up in grasslands.

ANSWER: **humus**

[10] Illuviation and eluviation are both types of this phenomenon which sees the downward movement of minerals and organic materials due to percolation of water.

ANSWER: **leaching** [accept word forms]