



HSAPQ

High School Academic Pyramid Questions

Fall 2008
ACF-Format Set #1

Round 12

Tossups

1. When used with resistors, they can be used to eliminate signals above or below desired frequencies in high-pass and low-pass filters. The quantity associated with these objects is equal to charge over voltage, and the function of one can be improved by placing an insulating material that conducts electric fields between its two metal plates. For 10 points, identify this circuit element which stores charge, and whose namesake property is measured in Farads.

ANSWER: capacitor

2. In the baroque era, this instrument was manufactured with a slide and may have been referred to as "da tirarsi." Michael Haydn and Leopold Mozart both wrote concerti for it with only two movements. This instrument poses "The Unanswered Question" in a Charles Ives work, and Jeremiah Clarke may have written a D major work called the "Prince of Denmark's March" which has become known as this instrument's "voluntary." Related to the cornet, for 10 points, name this instrument played by Winton Marsalis, a brass instrument with three valves.

ANSWER: trumpet

3. The speaker of this poem tells its addressee that "The grave's a fine and private place, / But none I think do there embrace." He warns that worms "will try / That long preserv'd virginity," and resolves to "tear our pleasures with rough strife / Thorough the iron gates of life." The speaker concludes that though certain others cannot make the sun stand still, "yet [they] will make him run," and argues that the addressee could refuse his advances "Till the Conversion of the Jews," "had [they] but World enough, and Time." For 10 points, name this poem by Andrew Marvell.

ANSWER: "To His Coy Mistress"

4. The volcanic Ankaratra Massif lies in its center, and this nation's Great Cliff of Angavo is bordered by the Betsimisaraka Escarpment. The Mandrare, Mananara, and Ivondro rivers are located in this nation, and its largest port is Toamasina. Lake Alaotra is its largest lake, its highest peak is Maromokotro, and the coelacanth (SEEL-uh-canth) lives off its shores. This country's largest ethnic group is the Merina, and this former colony of France is located on the east of the Mozambique Channel. For 10 points, name this African island nation, with its capital at Antananarivo.

ANSWER: Madagascar

5. Along with organo-aluminum compounds, this element is commonly used to catalyze alkene polymerization via Ziegler-Natta catalysts. An oxide of barium and this element is notable for exhibiting piezoelectricity. It is isolated from its oxide salt in the Kroll process, and that oxide is widely used as a pigment due to its white color. It lies between scandium and vanadium on the periodic table and is the second lightest transition element. For 10 points, identify this element with atomic number 22 and symbol Ti.

ANSWER: titanium [accept **Ti** before it is read]

6. One novel written by a native of this country focuses on a retired public school teacher living in Vastmanland and is entitled *Death of a Beekeeper*. An author from this country wrote about the twenty-six inch tall strangler of Jehosaphat in *The Dwarf*, and penned a novel set after the crucifixion of Jesus, *Barabbas*. This country is home to the playwright of *The Ghost Sonata* and *Miss Julie*, as well as Lars Gustaffson, Selma Lagerlof, and Par Lagerkvist. For 10 points, name this home country of August Strindberg, where the Nobel Prize in Literature is awarded in Stockholm.

ANSWER: Sweden

7. This thinker collaborated with James Baldwin on *A Rap on Race*. In addition to work on Pacific Islanders collected in *Male and Female*, this anthropologist noted that females are the leaders in Chambri in *Sex and Temperament in Three Primitive Societies*. Derek Freeman criticized this anthropologist's fieldwork, especially a book that proposed that the happiness of the subjects was due to their carefree, unrepressed lifestyle. For 10 points, identify this anthropologist, who wrote *Coming of Age in Samoa*.

ANSWER: Margaret Mead

8. This entity signed the Peace of Wordingborg, and reached the height of its power after signing the Peace of Stralsund. It centered around the four kontors of Wisby, Bergen, London, and Bruges. Before being attacked by Waldemar IV, it achieved dominance through the use of cog ships, although its monopoly was eventually broken by the Dutch. Founded in the twelfth century by merchants in Hamburg and Lubeck, for 10 points, name this medieval federation of North German shipping towns.

ANSWER: Hanseatic League [accept the Hansa]

9. Early models for it used a constant velocity parametrization model. Those models only considered the regions of mafic and ultramafic rock that surrounded it. First hypothesized due to an event that occurred in the Kulpa valley, it is marked by a rapid increase in the velocity of compressional waves, and its depth ranges from five to fifty kilometers. Named for a Croatian seismologist, for 10 points, identify this region which forms the boundary between the crust and the mantle.

ANSWER: Mohorovicic discontinuity

10. Matrices that are not square may have retractions and sections without having one of these, and a square matrix doesn't have one if its determinant is zero; in other words, if it is degenerate or singular. The trigonometric functions are made to have one by introducing domain restrictions, though notational difficulties arise due to the traditional use of superscripts. The identity function has one, since it easily passes the horizontal line test. For 10 points, give the term that indicates that a function's action undoes the action of another.

ANSWER: inverse [accept word forms]

11. These two words are preceded by "Chapter 1" in an album which contains "Our Arrival" and "Gotcha Shakin'." This phrase names a song where the singer is lost in a "Roman wilderness of pain," addressed to a "beautiful friend." Another song with this name claims that "the love you take is equal to the love you make." In addition to those songs by The Doors and The Beatles, a more recent song places this time period after the singer "tried so hard, and got so far." For 10 points, name this time during which "it doesn't even matter" according to a Linkin Park song.

ANSWER: "The End" [or "In the End"]

12. This character was introduced as a slow-witted astronomer. He opines that hungry men have trouble behaving morally, noting "it is hard for an empty sack to stand upright." A book whose title saw this figure "improved" was later reissued as *The Way to Wealth*, and his namesake publication came out each year from 1732 to 1757. His other sayings include "God helps those who help themselves" and "Early to bed and early to rise, makes a man healthy, wealthy, and wise." For 10 points, name this alias of Benjamin Franklin, the narrator of a certain "Almanac."

ANSWER: **Poor Richard** [or Richard **Saunders**; prompt on **Richard**]

13. This author wrote about a man who learns "Proot" is the magic word to control Modestine during his trip to St. Jean du Gard in "Travels with a Donkey." Ebenezer sells his nephew to the *Covenant* in a novel by this man about David Balfour. In addition to *The Master of Ballantrae*, another of his novels begins when Old Man Pew comes to the Admiral Benbow to look for Billy Bones, and focuses on Jim Hawkins and Long John Silver. For 10 points, name this author of *Kidnapped* and *Treasure Island*.

ANSWER: Robert Louis **Stevenson**

14. He was imprisoned in Ahmadnagar fort for twenty months during World War II, and he gave the noted "Tryst With Destiny" speech. He ordered the occupation of the Portuguese colony of Goa, and he was sometimes called Pandit. His adherence to the policy of Non-Alignment was tested with the 1962 Chinese invasion, and he spent nine years of his life in prison for his involvement with the Congress Party and the Quit India Movement. For 10 points, name this father of Indira Gandhi and first prime minister of India.

ANSWER: Jawaharlal **Nehru** [accept **Pandit** before it is read]

15. Two creatures from pre-Islamic Persian myth, the donkey god Khara and the demon Azi Dahaka, had six of these. The Greek monster Typhon issued venom from them, and Horus is said to lose these every time there is an eclipse. A guard killed by Hermes, Argus, had a hundred of these, and some of the creatures who had less than the usual number of these were Steropes, Brontes, Arges, and Polyphemus, who lost his to Odysseus. For 10 points, name these physical features, of which Shiva had three and each Cyclops had but one.

ANSWER: **eyes**

16. The creator of this work made a similar "Golden" piece of art that sits on a base of mashed-together trapezoidal prisms. This work was inspired by its creator's previous *Maiastra* series. Seven works with this name were constructed in marble, while nine are in bronze. This work was taxed in customs for not being "art" upon entry into the United States, and its body is elongated while its head, beak, and feathers are streamlined. For 10 points, name this series of statues by Constantin Brancusi that depicts an avian in the cosmos.

ANSWER: the **Bird in Space** series [or **Bird in Flight**]

17. Ibn Abbad led a failed rebellion designed to prevent Frederick II from purging this place of Muslims, and the Battle of Benevento led to Angevin rule until this island's namesake Vespers. Operation Husky, designed to liberate this island from Axis control, was the first Allied excursion back into Europe during World War II, and Archimedes's inventions temporarily defended this island's city of Syracuse from Roman attacks. For 10 points, name this island, an Italian possession southeast of Sardinia, which is still home to the Mafia.

ANSWER: **Sicily**

18. He wrote that visible signs or sacraments were the only means to provide religious unity in his *Retractions*. He also wrote a book which asserts that Scripture must be interpreted reflecting charity and love, advocates memorizing Scripture, and discusses the role of allegory in *On Christian Doctrine*. After Rome was sacked, he described the relationship between the title entity, the church, and potentially malevolent pagan forces in *The City of God*. A Manichaean convert influenced by Saint Ambrose, for 10 points, identify this author of *Confessions*.

ANSWER: Saint **Augustine** of Hippo

19. In one of his stories, a man ends up barking on all fours on the sidewalk to fool a policeman in "The Topaz Cufflinks Mystery." A fabricated plan to kill Mr. Fitweiler leads to Ulgin Barrows being fired after she accuses Erwin Martin in his story "The Catbird Seat." The title character of another of his stories is an expert with the "Webley-Vickers 50.80" and operates on Wellington McMillan before buying a puppy biscuit and picking up his wife. For 10 points, name this author of "The Secret Life of Walter Mitty."

ANSWER: James **Thurber**

20. This artist depicted a yellow cat on a sill looking at the Eiffel Tower in his painting *Paris Through the Window*. He painted a series of *Tales from the Arabian Nights*, as well as a work where he gestures toward a painting of a red goat and displays an oddly-shaped left hand, *Self-Portrait With Seven Fingers*. Another of his paintings portrays upside-down houses, a crescent moon, and a sheep looking at a green peasant. For 10 points, name this Russian painter of *I and the Village*.

ANSWER: Marc **Chagall**

21. In this war, Admiral William Sampson ordered the sinking of the *USS Merrimac* in an unsuccessful attempt to bottleneck the enemy fleet in Santiago. It was ended by the Treaty of Paris, and the "yellow journalism" of William Randolph Hearst contributed to popular support for it. For 10 points, the Battle of Manila Bay occurred during what war between the United States and a European power that was prompted by the explosion of the *U.S.S. Maine*?

ANSWER: **Spanish-American** War

22. Earlier surgical treatments for this conditions involved pallidotomy and thalamotomy, while newer treatments for it can be supplemented by drugs which inhibit monoamine oxidase-B. It is caused by the degeneration of the neurons of the substantia nigra, which decreases the production of dopamine, and L-dopa is most commonly used to treat its symptoms. First described by its namesake British scientist in 1817, for 10 points, identify this disease characterized by tremors and slowness of movement, also called the "shaking palsy."

ANSWER: **Parkinson's** disease



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Bonuses

1. Enceladus is a moon with a notably high value for this quantity, which is also high for snow on Earth. For 10 points each:

[10] Name this quantity, the ability of an object to diffusely reflect light from the sun.

ANSWER: albedo

[10] Another object with a notably high albedo is this dwarf planet, the largest in the solar system. Found in the Kuiper belt, it is as much as eight percent bigger than Pluto.

ANSWER: Eris

[10] Albedos are useful indicators of high metallic content in these bodies, which are found between Mars and Jupiter in a namesake belt.

ANSWER: asteroids

2. Name these prominent Supreme Court justices of the second half of the 20th century, for 10 points each.

[10] This man served as governor of California and ran with Thomas Dewey for vice-president in 1948. He wrote the decision for the landmark case *Brown v. Board of Education*.

ANSWER: Earl Warren

[10] This Warren court justice, a New Jersey Democrat, wrote the decision for *Baker v. Carr*, which established the "one person, one vote" principle.

ANSWER: William Brennan

[10] This man served on the Court from 1939 to 1975, making him the longest serving justice. He tried to establish a constitutional right to privacy in his decision in *Griswold v. Connecticut*.

ANSWER: William Douglas

3. Men wearing suits and bowler hats fall from the sky in this artist's painting *Golconda*. For 10 points each:

[10] Identify this painter of *On the Threshold of Liberty*, *Time Transfixed*, and *The Son of Man*, which depicts an apple hovering in front of the face of yet another man wearing a bowler hat.

ANSWER: René Magritte

[10] Magritte was a member of this artistic movement, which used bizarre, dreamlike imagery. Another of its members, Salvador Dali, painted *The Persistence of Memory*.

ANSWER: Surrealism

[10] Magritte's painting *The Treachery of Images* features a painstakingly realistic depiction of this household object above a sentence stating "this is not" this object.

ANSWER: a pipe

4. Answer the following about the Poynting vector, for 10 points each.

[10] The Poynting vector is equal to the cross-product of the electric and magnetic fields divided by this quantity, symbolized μ_0 , which also appears in Ampere's Law.

ANSWER: **permeability of free space**

[10] The magnitude of the Poynting vector is equivalent to this quantity, the power carried by the electromagnetic wave per unit area.

ANSWER: **intensity**

[10] Radiation pressure is derived by dividing intensity by this scalar quantity, which is approximately three times ten to the eighth meters per second in a vacuum.

ANSWER: **speed of light** [prompt on **c**]

5. While ancient writers noted four of these structures in the world, the most important one in myth was built by Daedalus on Crete. For 10 points each:

[10] Name this maze, which Theseus solved by unwinding a ball of string.

ANSWER: the **Labyrinth**

[10] The Cretan Labyrinth was built to contain this offspring of Pasiphae, who ate fourteen Athenian youths each year.

ANSWER: the **Minotaur**

[10] Theseus conquered the Labyrinth with the help of this daughter of King Minos, who eloped with him but was abandoned on Naxos soon afterwards.

ANSWER: **Ariadne**

6. Answer the following about the Canadian province of Alberta, for 10 points each.

[10] Sir Winston Churchill Square is the center of downtown in this capital of Alberta.

ANSWER: **Edmonton**

[10] Several heated sports rivalries occur between teams in Edmonton and teams in this largest city in Alberta, which is also home to a notable Stampede.

ANSWER: **Calgary**

[10] This national park in southwest Alberta forms an International Peace Park with Montana's Glacier National Park.

ANSWER: **Waterton Lakes** National Park

7. It occurs in three varieties, one of which is restricted to muscle cells, in which its release of large stores of calcium causes muscle contraction. For 10 points each:

[10] Identify this organelle, whose other two varieties, rough and smooth, are distinguished by whether another organelle ever associates with it.

ANSWER: **ER** [or **endoplasmic reticulum**]

[10] Name that other organelle, which associates with the rough endoplasmic reticulum whenever it begins to produce certain proteins.

ANSWER: **ribosomes**

[10] The start codon AUG codes for this amino acid which initiates translation of mRNA. All proteins produced in humans have this acid at the amino terminal.

ANSWER: **methionine** [or **met**; or **m**]

8. She got her start with the Denishawn dance school, where she became a sensation dancing in the Aztec-inspired ballet *Xochitl*. For 10 points each:

[10] Name this American dancer and choreographer, who created *Seraphic Dialogue* to represent Joan of Arc, as well as *Cave of the Heart* to represent Medea.

ANSWER: Martha **Graham**

[10] Martha Graham choreographed this ballet, which originally included sections depicting strife and depicts rural farmers in Pennsylvania, with music by Aaron Copland.

ANSWER: **Appalachian Spring**

[10] Late in life, Martha Graham created this ballet based on the *Orestia*. It includes Paris and Helen of Troy, the sister of the title character.

ANSWER: **Clytemnestra**

9. He dedicated his Third Piano Quartet in B minor to Goethe (GUR-tuh). For 10 points each:

[10] Name this German composer of many *Songs Without Words*, the oratorio *Elijah*, and the *Italian* symphony.

ANSWER: Jakob Ludwig Felix **Mendelssohn**-Bartholdy

[10] On a trip to Britain, Mendelssohn wrote this overture, which opens with a B minor descending melody depicting waves on the namesake Scottish islands.

ANSWER: **Hebrides** Overture [or **Fingal's Cave**]

[10] When he was 17, Mendelssohn wrote an overture to this Shakespeare play, which he later expanded to include a wedding march.

ANSWER: A **Midsummer Night's Dream**

10. On a reaction coordinate diagram, they are the peaks; they usually are drawn with half-formed and half-broken bonds. For 10 points each:

[10] Identify these phenomena, also referred to as activated complexes, which Hammond's postulate claims will resemble the species most like it in energy.

ANSWER: **transition states**

[10] This is the term given to the potential energy possessed by the transition state, often symbolized ΔG^\ddagger (delta gee double dagger).

ANSWER: **activation energy**

[10] The troughs in a reaction coordinate diagram, in contrast, represent these local minima of potential energy.

ANSWER: reaction **intermediates**

11. One of this woman's stories is entitled "We Have Always Lived in the Castle." For 10 points each:

[10] Identify this American short story writer, who wrote about a society in which people are randomly selected to be murdered in "The Lottery."

ANSWER: Shirley **Jackson**

[10] This author of *Historic Doubts on the Life and Reign of King Richard III* also wrote an early Gothic novel, *The Castle of Otranto*.

ANSWER: **Horace Walpole** [prompt on **Walpole**]

[10] This Bavarian king built the beautiful castle Neuschwanstein, in addition to patronizing Richard Wagner and being absolutely crazy.

ANSWER: **Ludwig II** [or **Ludwig the Mad**; or **Mad King Ludwig**; prompt on **Ludwig**]

12. For 10 points each, name some battles between Greeks and Persians.

[10] The Athenians led by Miltiades forced the Persians back to their ships in this 490 BC victory which legendarily inspired Pheidippides to run 26 miles with news of the battle.

ANSWER: **Marathon**

[10] King Leonidas delayed a vastly larger Persian force under Xerxes I in a namesake mountain pass at this 480 BC battle.

ANSWER: **Thermopylae**

[10] In this 479 BC battle, the united Greek city states defeated the Persian general Mardonius. The Persians would never invade Greece in full force again.

ANSWER: **Plataea**

13. Okun's Law predicts a 2.5 percent loss of GDP for every percent increase in this statistic. For 10 points each:

[10] Name this statistic, which is inversely proportional to inflation on the Phillips curve.

ANSWER: **unemployment**

[10] This British economist argued that government spending could reduce unemployment in *The General Theory of Employment, Interest, and Money*.

ANSWER: John Maynard **Keynes**

[10] John Maynard Keynes, along with Harry Dexter White, helped create the International Monetary Fund at this international 1944 conference.

ANSWER: **Bretton Woods**

14. In his only novel, the Abyssinian prince of Happy Valley explores the outside world. For 10 points each:

[10] Name this author of "The Vanity of Human Wishes" and *Rasselas*, whose life was meticulously recorded by James Boswell.

ANSWER: Samuel **Johnson**

[10] In 1755, Johnson produced a notable work of this kind. Other creators of English-language versions of them include Isaac Funk and Noah Webster.

ANSWER: a **dictionary** [accept word forms]

[10] Johnson wrote a biography of this earlier author of the *Dunciad* and *An Essay on Man*, who described the cutting of Belinda's hair in *The Rape of the Lock*.

ANSWER: Alexander **Pope**

15. It was codenamed Operation Overlord and included glider and parachute landings to take key positions behind German defenses. For 10 points each:

[10] Name this assault which began on D-Day, June 6, 1944 and led to the first allied foothold on Europe.

ANSWER: Allied Invasion of **Normandy** [or obvious equivalents]

[10] This Allied Expeditionary Force Supreme Commander planned the attack. After its success he, Omar Bradley, and Bernard Montgomery would lead separate armies across Europe.

ANSWER: Dwight David **Eisenhower**

[10] Around 500 paratroopers from this expatriate organization led by Charles DeGaulle joined the British S.A.S. in removing key targets in Brittany.

ANSWER: **Free French** [or **Françaises Libres**]

16. The unnamed bride in this play escapes from the title event with Leonardo Felix. For 10 points each:
[10] Name this play ending with the death of the Bridegroom, written by a leading member of the Generation of '27.

ANSWER: **Blood Wedding** [or **Bodas de Sangre**]

[10] This poet's Rural Trilogy consists of *The House of Bernarda Alba*, *Yerma*, and *Blood Wedding*.

ANSWER: Federico Garcia **Lorca**

[10] Federico Garcia Lorca is a native of this country, the birthplace of such other authors as Miguel de Unamuno and Pedro Calderon de la Barca.

ANSWER: **Spain** [or **España**]

17. Its programs are compiled into bytecode and then interpreted, allowing it to be extremely portable. For 10 points each:

[10] Identify this programming language developed by Sun Microsystems, for which the Swing library has been programmed.

ANSWER: **Java**

[10] Java bytecode is interpreted by this sort of entity, a software emulation of a computer.

ANSWER: **virtual machine**

[10] Java's ability to interface easily with the Internet spawned these entities, programs that run from within the context of a web browser.

ANSWER: **applet**

18. Fashion writer Clara Velde has a mental breakdown after her prized emerald ring is stolen in this author's novel *The Theft*. For 10 points each:

[10] Name this author of *The Victim* and *Humboldt's Gift*, who wrote about Moses, who hopes to gain custody of his daughter Junie from his divorced wife Madeleine, in *Herzog*.

ANSWER: Saul **Bellow**

[10] In this picaresque Bellow novel, the title character goes lizard hunting in Mexico with Thea, and eventually marries Stella when he returns to Chicago.

ANSWER: *The* **Adventures of Augie March**

[10] Tommy Wilhelm is swindled out of his final seven hundred dollars by Dr. Tamkin in this short Bellow novel, which takes its title from Horace.

ANSWER: **Seize the Day**

19. This empire's ruler Abubakari II sailed into the Atlantic Ocean with a fleet of two thousand ships in 1311. For 10 points each:

[10] Name this African empire founded by the legendary king Sundiata, whose rulers included Mansa Musa.

ANSWER: **Mali** Empire

[10] Mansa Musa caused the price of gold to rise in Cairo by giving away tons of it while performing this pilgrimage to Mecca, one of the five pillars of Islam.

ANSWER: **hajj**

[10] The decline of the Mali Empire in the 15th century enabled Sunni Ali to expand this empire centered in the Niger Valley, whose major trading center was Gao.

ANSWER: **Songhai** Empire

20. He is the nephew of King Arthur by Morgause and the brother of Gaheris, Gareth, and Agravain. For 10 points each:

[10] Name this knight of the round table who battled the Green Knight.

ANSWER: Sir **Gawaine**

[10] The story of *Sir Gawain and the Green Knight* was probably written by this poet known only by the name of his poem about a precious gem.

ANSWER: the **Pearl** Poet

[10] The Green Knight turns out to be this host of Gawain, who set up the whole ploy to test Gawain's honesty.

ANSWER: Lord **Bertilak** [or **Bernlak**, or **Bercilak**]

21. Ronald Reagan exhorted him to "Tear down this wall!" For 10 points each:

[10] Name this Soviet leader who presided over the breakdown of the USSR.

ANSWER: Mikhail Sergeyeovich **Gorbachev**

[10] Along with Perestroika, Gorbachev introduced this reform which opened the political process and allowed more freedom of expression in criticism of the government.

ANSWER: **Glasnost**

[10] Gorbachev was succeeded by this first popularly elected president of Russia, known for his drunkenness and dancing.

ANSWER: Boris Nikolayevich **Yeltsin**