



# HSAPQ

## High School Academic Pyramid Questions

Fall 2008  
ACF-Format Set #2

Round 7

Tossups

1. One of this man's novels concerns the secret marriage of Amy Robsart to Robert Dudley, and in another novel, Jeanie Deans attains a pardon for her sister and a better farm for her father. In another novel, Frank Osbaldistone is helped by the title outlaw. In his most famous novel, the Black Knight turns out to be Richard the Lionheart, and Robin Hood helps lay siege to a castle to rescue Rowena. For 10 points, name this Scottish novelist of *Kenilworth*, *The Heart of Midlothian*, *Rob Roy*, and *Ivanhoe*.

ANSWER: Sir Walter Scott

2. The Aymara frequently revolted against this group, which originated in the village Paqari-tampu. Some peoples under their control were the Chancas and the kingdom of Chimu, and they began establishing garrisons under the rule of Viracocha. Their communication system involved knotted string, called quipu, and one descendant of these people took the name Tupac Amaru the second. Ended after Atahualpa's execution by Pizarro, for 10 points, name this civilization ruled from Cuzco in modern-day Peru.

ANSWER: Inca [or Incans; or Tahuantinsuyo]

3. The tantalate of one of these elements is the densest known white substance, and an isotope of another of them is manufactured as the bone cancer-treating drug "Quadrumet." In addition to lutetium and samarium, this period contains the second-lightest synthetic element, promethium. Poor shielding by its 4f electrons generates their namesake "contraction". For 10 points, name this period of the elements 57 through 71, which is typically displayed in a separate part of the periodic table, just above the actinides.

ANSWER: lanthanides [accept lanthanoids; prompt on "rare earth elements"; prompt on "lutetium" before "bone"]

4. Like Marilyn Manson, this man recorded a cover of "Personal Jesus," but his was on an album that also included him singing "I hurt myself today" in a Nine Inch Nails cover. That album, *American IV*, came out fifty years after he claimed "I keep a close watch on this heart of mine." He claimed that he "shot a man in Reno just to watch him die" in another song, and his most successful song claims "love is a burning thing" and was written by his wife June Carter. For 10 points, name this singer of "I Walk The Line," "Folsom Prison Blues," and "Ring of Fire."

ANSWER: Johnny Cash

5. In a 1607 play, the role of this type of person is acted by the grocer's apprentice Rafe. In addition to that Francis Beaumont play about one "of the burning pestle," this is the profession of Arthegall and Guyon, characters in *The Faerie Queene*. A member of this profession tells a tale about Arcite and Palomon, who battle for the right to marry Emily. This is also the profession of the title characters of a poem by the Pearl Poet. For 10 points, name this profession shared by the first narrator in *The Canterbury Tales* and some members of King Arthur's court.

ANSWER: knights

6. A compound named after this structure sees the conversion from *cis* to *trans* orientation at the eleventh carbon, and ipRGCs are ganglion cells found in this structure that are sensitive to melanopsin, which helps maintain circadian rhythms. The uvea lies between this entity and the sclera. A region on it that lacks blood vessels is called the fovea centralis, and is also the central portion of the macula. For 10 points, identify this layer of the eye, which contains rods and cones that help transmit optical information.

ANSWER: retina

7. The protagonist of this novel helps to rob Blum's Delicatessen and writes a fake ransom note, which he signs "Red." Based on the trial of Robert Nixon, this novel is divided into three sections, "Fear," "Flight," and "Fate." It ends with Boris Max delivering a lengthy speech about institutional racism, which fails to prevent the protagonist from being sentenced to death for accidentally smothering Mary Dalton with a pillow. For 10 points, name this 1940 novel about Bigger Thomas, written by Richard Wright.

ANSWER: Native Son

8. The lowest point in this nation is the Djourab Depression, and in its northeast is the Ennedi Plateau. The Oubangui Plateau is in the south of this country, and Mount Koussi is found in this nation's Tibesti Massif. The only rivers in this nation are the Chari and Logone, and this nation's Aozou Strip has been a point of contention with this nation's neighbor to the north. For 10 points name this African country located south of Libya with capital at N'Djamena.

ANSWER: Chad

9. In this war, Baron von Seydlitz was promoted to major general after the Battle of Kolin, and John Stuart negotiated the treaty ending this war. Other battles in this conflict included Krefeld and Leuth, and this conflict was preceded by the Diplomatic Revolution. The Treaty of Hubertusburg allowed Frederick the Great to keep Silesia at the end of this war, and Pitt the Elder was responsible for the successful British strategy in this conflict. For 10 points, name this European war that was ended by the Treaty of Paris and lasted from 1756 to 1763.

ANSWER: Seven Years' War

10. This structure is located to the southeast of the Piazza della Minerva, which contains a Bernini-sculpted elephant that supports an obelisk. Melozzo da Forlì's *Annunciation* is located in this structure, which was once thought to be designed by either Apollodorus of Damascus or the emperor Hadrian himself. This structure has a massive dome that is exactly as tall as it is wide, and contains an oculus at its top. For 10 points, name this church in Rome, originally a temple dedicated to all the ancient Roman gods.

ANSWER: the Pantheon

11. In 2005, Rikken, Strohm and Wyder observed this effect in phonons, proving its existence for uncharged particles. This effect can be quantified via the van der Pauw technique, and the mechanism behind it is the Lorenz force. The "quantum" version of this effect is quantized in multiples of Planck's constant over the square of the charge on an electron. For 10 points, name this effect in which the application of an external magnetic field to a current-carrying conductor results in the generation of a voltage gradient.

ANSWER: Hall effect

12. An early conflict in this war saw the ships President and Congress attack the Belvidera, which was able to repair safely and escape. Another battle in this war was fought when Stephen Van Rensselaer sent troops to Queenston Heights, and Winfield Scott commanded at its battle of Lundy's Lane. Washington D.C. was defended in the battle of Bladensburg in this war, that saw the use of the pirate Jean Lafitte in the Andrew Jackson commanded Battle of New Orleans. For 10 points, name this war between the United States and Britain, ended by the treaty of Ghent.

ANSWER: War of **1812**

13. In Aztec myth Tonatiuh fills this role, while the Sumerian deity of this and justice was depicted inspiring Hammurabi. In addition to Shamash, a Roman god of it appeared on coins of Constantine and was worshiped by Elagabalus, while in Norse myth Skoll attempts to eat this type of deity. The Greek deity of this was identified with Hyperion and had his son Phaethon attempt to take his role of driving a chariot across the sky. For 10 points, name this role filled in Egyptian myth by Ra and in Greek myth by Helios.

ANSWER: **sun** gods [accept clear knowledge equivalents]

14. One feature of these objects is the Gunn-Peterson trough. The presence of a faint absorption line distinguishes BL Lac from these objects, though a 2006 paper hypothesizes that BL Lac objects, gamma ray bursters, and these objects are varieties of the same object. The brightest of these is found in Virgo, and these objects are often found surrounding supermassive black holes. For 10 points, name these objects typically found near the center of galaxies, whose name is shorthand for "quasi-stellar object."

ANSWER: **quasar** [accept **QSO** until "quasi"; accept **quasi-stellar object** until "quasi"]

15. Extensions of this concept include one named after Hall and Pearce, and a phenomenon known as latent inhibition. This phenomenon is highly context-dependent, and given a large enough amount of time, reinstatement can spontaneously occur after extinction. Its main premise is that given enough trials, an unconditioned response can be elicited through both an unconditioned and conditioned stimulus. For 10 points, name this type of conditioning, most famously demonstrated in Pavlov's dogs, which is contrasted with operant conditioning.

ANSWER: **classical conditioning** [accept **Pavlovian conditioning** before "Pavlov" is read]

16. This is the first "untouchable number," and it is the number of "exceptional" Lie groups. The complete graph with this many vertices is not planar according to Kuratowski's theorem. The Abel-Ruffini theorem states that this is the smallest degree of radicals in a polynomial with no general solution. This is the second Fermat prime, the number of Platonic solids, and the fifth number of the Fibonacci sequence. For 10 points, name this number, which is written one-zero-one in binary, and equal to the square root of 25.

ANSWER: **five**

17. In one of his novels, a rogue general is served on a platter and fed to the palace guard, while in a short story by this author, a group of small people give an enormous drowned man a funeral. In addition to *The Autumn of the Patriarch*, he wrote a novel titled *Leaf Storm*. Florentino wins the heart of Fermina after Dr. Urbino's death in *Love in the Time of Cholera*, and his best known work describes several generations of the Buendia family. For 10 points, name this Colombian author of *No One Writes to the Colonel* and *One Hundred Years of Solitude*.

ANSWER: Gabriel **García Márquez**

18. Among the officials involved in this process are the postulator and the promoter group. The second step in this process earns one the title "Servant of God", once enough witnesses to "heroic virtues" have testified. The third step requires verification of those heroic virtues and investigation into a miracle, while the final step involves attribution of a second miracle. For 10 points, name this process one step beyond beatification, the process by which a Catholic becomes a saint.

ANSWER: canonization [accept beatification until "final"]

19. This man painted a figure in a blue loincloth sitting on a pink mattress and wearing a gold helm in his *Mars Resting*. A boy clutching a globe engages the title figure, who tends to a basin in *An Old Woman Frying Eggs*, and the same figure is handed a goblet filled with water from the title Seville resident in another of his works. A defeated Dutch commander hands over keys in his *Surrender at Breda*, and his only surviving nude, who stares at a mirror, is *The Rokeby Venus*. Known for painting *Innocence X*, for 10 points, name this Spanish painter of *Las Meninas*.

ANSWER: Diego Rodríguez de Silva y Velázquez

20. In one of this author's novels, the protagonist confesses to stealing "The Just Judges," a panel of the Ghent Altarpiece. That novel is set in an Amsterdam bar named Mexico City, and is narrated by Jean-Baptiste Clamence. In addition to *The Fall*, this author wrote a novel about a man who sleeps with Marie Cardona and does not cry at his mother's funeral. In that novel, the protagonist is sentenced to death after shooting an Arab on an Algerian beach. For 10 points, name this existentialist, the French author of *The Stranger*.

ANSWER: Albert Camus

21. Commanders of this ruler include Charles Worsley and Henry Ireton, and he had the Earl of Manchester relieved of command. Thomas Harrison dominated the Barebones Parliament during his rule, and with Thomas Fairfax he won a victory at Naseby with his New Model Army. He dissolved the Rump Parliament, and the faction he led was known as the Roundheads, as opposed to the Cavalier supporters of Charles I. For 10 points, name this Puritan leader in the English Civil War, a Lord Protector of England.

ANSWER: Oliver Cromwell

22. He composed a seven movement ballet that ends with a Molto ritmico entitled *Dance Panels*, and only the last two movements were premiered of his *Statements: Militant, Cryptic, Dogmatic, Subjective, Jingo, Prophetic*. One work of his involves a narrator reading works by the sixteenth president, and another uses variations on the Shaker hymn *Simple Gifts*. This composer of *A Lincoln Portrait* composed a "Hoe-Down" for *Rodeo*. For 10 points, name this composer of *Fanfare for the Common Man* and *Appalachian Spring*.

ANSWER: Aaron Copland



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Bonuses

1. This type of passive transport is often used for small molecules and ions that cannot otherwise pass through the cell membrane. For 10 points each:

[10] Name this kind of transport in which a membrane protein helps transport a molecule down an electric potential or concentration gradient.

ANSWER: **facilitated diffusion** [do not accept “diffusion”]

[10] This transport protein, which is not a symport, uses energy gained from moving a molecule out of the cell *down* its concentration gradient to move another into the cell *against* its gradient.

ANSWER: **antiporter** [prompt on **contransporter**; prompt on **secondary active transporter**]

[5/5] One notable antiport “pumps” three of a certain cation out of the cell for every two of another cation pumped into the cell. For 5 points each, name those two cations.

ANSWER: **sodium** [or **Na<sup>+</sup>**] and **potassium** [or **K<sup>+</sup>**]

2. It is thought to possibly be inspired by a typical Icelandic volcanic eruption. For 10 points each:

[10] Name this time preceded by the *fimbulwinter*, the climactic battle of Norse mythology.

ANSWER: **Ragnarok**

[10] At Ragnarok, Vidar will rip open this wolf’s jaws with the help of the Thickest Shoe, to avenge his father Odin’s death at the jaws of this wolf once bound by Gleipnir.

ANSWER: **Fenrir** [or the **Fenris** wolf]

[10] Ragnarok will end with Surt, the leader of this class of beings, destroying the world-tree and the cosmos.

ANSWER: **fire giants** [prompt on **giants**]

3. He considered Denmark a national enemy after being forced to give up Alvsborg to pay off a war indemnity according to the peace of Knared. For 10 points each:

[10] Name this Swedish king, whose daughter Christina had Axel Oxenstierna as regent. His forces defeated Wallenstein at the battle of Lutzen, where he died after being separated.

ANSWER: **Gustavus Adolphus** [or **Gustaf II Adolf**]

[10] Gustavus Adolphus was killed during the Northern phase of this war, which had begun over the defenestration of Prague. It was settled at Westphalia.

ANSWER: **Thirty Years War**

[10] This battle of the Thirty Years War was fought because Christian of Anhalt made a stand that was quickly routed by the count von Tilly, giving Catholics control of Prague.

ANSWER: Battles of **White Mountain** [or **Bila Hora**]

4. Active hostilities in this conflict ended with the Pammunjon Armistice. For 10 points each:  
[10] Name this event that was sparked by Kim Il Sung's decision to invade a nation led by Syngman Rhee.

ANSWER: **Korean War**

[10] General Matthew Ridgeway took over for this man after this man was relieved of duty by President Truman in 1951 for threatening to expand the Korean conflict into China.

ANSWER: Douglas **MacArthur**

[10] MacArthur had earlier engineered an amphibious landing at this seaport to Seoul, which cut the North Korean supply lines and allowed UN forces to push well above the 38th Parallel.

ANSWER: **Inchon**

5. This poetry collection contains sections like "Revolt" and "Spleen and Ideal." For 10 points each:

[10] Name this 1861 poetry collection that contains many descriptions of Paris.

ANSWER: *Les **Fleurs du mal*** [or *The **Flowers of Evil***]

[10] This French poet wrote *Les Fleurs du Mal*.

ANSWER: Charles Pierre **Baudelaire**

[10] Baudelaire made the first French translations of several works of this American poet of "The Conqueror Worm" and "Annabel Lee." He also wrote "The Pit and the Pendulum."

ANSWER: Edgar Allen **Poe**

6. Identify the following about things located on or off of the east coast of Africa, for 10 points each:

[10] Consisting of its namesake island and Pemba, this archipelago joined with Tanganyika to form the Republic of Tanzania in 1964.

ANSWER: **Zanzibar**

[10] This country, whose cities included Mombasa and Nairobi, is on the east side of central Africa.

ANSWER: **Kenya**

[10] Lying one thousand miles east of Mombasa, Kenya, this republic consists of one hundred islands in the Indian Ocean. Its largest island is Mahe and its capital is Victoria.

ANSWER: **Seychelles**

7. Name these French authors, for 10 points each.

[10] This author included works about Eugenie Grandet, Pere Goiroit, and Cousine Bette in *The Human Comedy*.

ANSWER: Honore de **Balzac**

[10] He wrote of a valet who recounts the story of his loves in *Jacques the Fatalist*, but is best known for his efforts on a non-fiction work.

ANSWER: Denis **Diderot**

[10] This man wrote of a family of giants that has a series of adventures in France in his *Gargantua and Pantagruel*.

ANSWER: Francois **Rabelais**

8. The title character of an opera hears this aria and realizes the body in the bag is not the Duke of Mantua but his own daughter. For 10 points each:

[10] Give the Italian name of this aria about the fickleness of women.

ANSWER: "La **Donna e Mobile**"

[10] *La Donna e Mobile* appears in this opera about a hunchback jester.

ANSWER: **Rigoletto**

[10] This Italian composer of *Nabucco* and *Otello* wrote *Rigoletto*.

ANSWER: Giuseppe Fortunino Francesco **Verdi**

9. Iron and coal or hot dogs and buns are examples of these. For 10 points each:

[10] Name these pairs of goods which are usually bought together, and thus shift in demand in the same degree at the same time.

ANSWER: **complementary** goods

[10] This quantity is negative for complementary goods, because a price increase for one good will cause a demand decrease for the other.

ANSWER: cross-price-**elasticity** of demand

[10] CDs and MP3s or butter and margarine are examples of this kind of good pair, in which an increase in demand for one good causes a rightward shift in demand for the other.

ANSWER: **substitute** goods [accept word forms]

10. Earn yourself 10 points for each of the following points you name.

[10] At this point in a phase diagram, a compound can co-exist in solid, liquid, and gas phases.

ANSWER: **triple** point

[10] Above this temperature, a compound becomes a superheated liquid, and liquid and gas phases are indistinguishable.

ANSWER: **critical** point [or **critical** temperature]

[10] This point represents the lowest possible melting point of a mixture and the composition of that mixture; for salt water, it is -21 degrees Celsius with a 23% by weight concentration of salt.

ANSWER: **eutectic** point

11. This poem opens with “you do not do” and claims that the title character is a “bag full of God.” For 10 points each:

[10] Name this poem that posits “every woman adores a fascist” and concludes “I’m through,” about a title relation who is a “man in black with a Meinkampf look.”

ANSWER: “**Daddy**”

[10] This American author wrote “Lady Lazarus” and other poetry collected in *The Colossus* and *Ariel*, in addition to “Daddy.”

ANSWER: Sylvia **Plath**

[10] This Sylvia Plath novel tells about Esther Greenwood’s descent into mental illness after earning a magazine internship.

ANSWER: *The **Bell Jar***

12. This king faced down the Pilgrimage of Grace uprising. For 10 points each:

[10] Name this English king, whose chief advisors included Thomas Cromwell and Thomas Cranmer .

ANSWER: **Henry VIII**

[10] Named for the incredible pageantry of the occasion, Henry VIII met with Francis I of France in this field near Calais in 1520 for the purposes of forming an alliance.

ANSWER: Field of the **Cloth of Gold**

[10] This daughter of Ferdinand and Isabella was Henry's first wife. She was the mother of Mary I, and Henry's attempt to have his marriage to her annulled led to the English Reformation.

ANSWER: **Katharine of Aragon**

13. He suggested that the ruble be made the international currency, and that oil be traded in a “basket of currencies.” For 10 points each:

[10] Identify this leader who made the communist Ali Rodriguez his finance minister, and advanced the ALBA as an alternative to the Free Trade Area of the Americas.

ANSWER: Hugo Rafael **Chavez** Frias

[10] Venezuela is a member of this cartel, which has had to drastically cut back supply of oil last week in the light of slumping prices.

ANSWER: **OPEC** [or **Organization of the Petroleum Exporting Countries**]

[10] Hugo Chavez joked about Che Guevara’s inability to sing during a televised phone call this man, who came to power after resignation of his brother Fidel.

ANSWER: **Raul Castro** [or **Raul Modesto Castro** Ruz; prompt on partial]

14. This novel is divided into the sections “Mosque,” “Caves,” and “Temple.” For 10 points each:

[10] Name this novel in which Adela Quested accuses Dr. Aziz of raping her inside the Marabar Caves.

ANSWER: A ***Passage to India***

[10] This author of *Maurice* and the dystopian short story “The Machine Stops” wrote *A Passage to India*.

ANSWER: Edgar Morgan **Forster**

[10] In this novel by Forster, Lucy Honeychurch rejects the marriage proposals of Cecil Vyse, instead marrying George Emerson.

ANSWER: A ***Room With a View***

15. For 10 points each name these works of Willa Cather.

[10] The title member of the Shimerda family arrives in Black Hawk and interacts with the narrator Jim Burden in this final novel of the Prairie Trilogy.

ANSWER: ***My Antonia***

[10] Kit Carson appears in this New Mexico set novel, in which Bishop Jean Marie Latour leads a newly created diocese.

ANSWER: ***Death Comes for the Archbishop***

[10] In this novel, Thea Kronborg goes from being the daughter of a Swedish preacher in Moonstone, Colorado to becoming a great opera singer.

ANSWER: The ***Song of the Lark***

16. He refused to meet with American ambassadors until he received a bribe in the XYZ Affair. For 10 points each:

[10] Name this French diplomat that served Napoleon, including at the Congress of Erfurt.

ANSWER: Charles Maurice de **Talleyrand**-Perigord

[10] Talleyrand met with Castlereagh and Metternich at this congress that sought to redraw the map of Europe after Napoleon’s defeat.

ANSWER: Congress of **Vienna**

[10] Talleyrand was instrumental in arranging the relatively lenient terms of this treaty which ended the Napoleonic Wars, making sure France retained its pre-revolution possessions.

ANSWER: 1814 Treaty of **Paris**

17. Followers of this religion must follow the Five Ks, which include keeping their hair uncut. For 10 points each:

[10] Name this Indian religion whose sacred place of The Golden Temple at Amritsar was raided on orders of Indira Gandhi.

ANSWER: **Sikhism**

[10] Sikhism was initially led by these leaders, ten men starting with Nanak, until Gobind Singh named a book as the eleventh one. In general this term can refer to any wise person.

ANSWER: **Gurus**

[10] The book that Singh elevated as Guru was this holy text of Sikhism, compiled by Guru Arjan Dev.

ANSWER: **Adi Granth** [or *Sri Guru Granth Sahib*]

18. This term describes a variable amount of memory accessed only during the runtime of the program. For 10 points each:

[10] Give this term which is contrasted with static memory.

ANSWER: **dynamic** memory

[10] This process deletes all variables in a heap of dynamic memory that are not referenced by a pointer.

ANSWER: **garbage collection**

[10] This kind of variable is defined in all functions within a program, and so cannot be removed by garbage collection or any other means while the program is running.

ANSWER: **global** variable

19. This member of the Russian Five left an opera unfinished that included the "Polovetsian Dances." For 10 points each:

[10] Name this composer who depicted a caravan being stopped in his *In the Steppes of Central Asia* and part of the opera *Prince Igor*.

ANSWER: Alexander Porfiryevich **Borodin**

[10] Mily Balakirev, who had gotten Borodin interested in the Russian Five, wrote this notoriously difficult "Oriental Fantasy" for piano that was orchestrated by Lyapunov.

ANSWER: **Islamey**

[10] This work, inspired by images by Victor Hartman, includes a "Ballet of the Chicks in Their Shells" and "The Great Gate of Kiev," as well as the "Promenade." It is by Mussorgsky.

ANSWER: **Pictures at an Exhibition**

20. When a hydrogen in this molecule is replaced by an -OH group, it is known as a phenol. For 10 points each:

[10] Name this molecule with formula C-6-H-6.

ANSWER: **benzene** [or **benzol**]

[10] Benzene cannot be represented by one Lewis structure; instead it undergoes this process, in which two structures alternate in presentation.

ANSWER: **resonance** [or **resonating**]

[10] This German chemist theorized that benzene resonated between two resonance structures.

ANSWER: Friedrich August **Kekule** von Stradonitz (keh-COOL-uh)

21. It is proportional to the time derivative of a non-constant magnetic field and occurs due to a changing current passing through a coil. For 10 points each:

[10] Name this property whose SI unit is a Henry.

ANSWER: **inductance** [or **inductors**]

[10] This British physicist has a law that relates induced EMF to the negative derivative of the magnetic flux. His namesake unit is approximately equal to 96500 coulombs.

ANSWER: Michael **Faraday**

[10] The Faraday cage is a device which realigns its charges such that this vector quantity is zero almost everywhere within the cage.

ANSWER: **electric field**