# 金 HSAPQ <br> High School Academic Pyramid Questions 

Fall 2008
ACF-Format Set \#1

Round 10

Tossups

1. Prior to World War II, this country's Rexist Party became a fascist organization under the leadership of Leon Degrelle, and the St. Michael's Agreement of 1992 turned this nation into a federal state. King Albert I led this country's resistance to German invasion in World War I, and King Leopold II gained international condemnation over his harsh rule of the Congo Free State. For 10 points, name this country that joined the Netherlands and Luxembourg to form the Benelux Economic Union in 1948, with its capital at Brussels.

## ANSWER: Belgium

2. This author wrote about Lawrence Oberman and Morton Gross's attempt to cheat inventor Charles Lang out of a patent in The Water Engine. One character rants about Gracie and Ruthie's theft of a piece of toast in this author's play about Teach's attempt to steal a rare nickel, American Buffalo. In another of his plays, James Lingk tries to get a refund from Ricky Roma, and Shelley Levene is arrested for stealing new leads from the Mitch \& Murray real estate agency. For 10 points, name this American playwright of Glengarry Glen Ross.
ANSWER: David Mamet
3. One type of them secretes perforin and granzymes, and another type was discovered in birds in an organ called Bursa of Fabrisius. Their specificity arises due to the recombination of Variable, Diversity, and Joining genes. All receptors on their surface are identical and contain light and heavy chains. Basophil and Neutrophil are granulocytes which are examples of these cells which bind to antigens. Consisting of NK, B, and T cells, for 10 points, identify these cells that are sometimes called lymphocytes. ANSWER: white blood cells [accept lymphocytes before it is read]
4. One creature of this type broke Loeding and Dromi. Examples of this type of creature are named Geri and Freki and eat Odin's leftover food. Other examples of this type of animal are Hati and Skoll, who chase the horses Arvak and Alsvid in the hopes of devouring the moon and sun. Another animal of this type was bound by the Gleipnir chain after biting off Tyr's hand, and will swallow Odin at Ragnarok. For 10 points, name this type of animal, exemplified by Fenrir.
ANSWER: wolf [or wolves]
5. This author titles books by Alphonse Daudet and Franz Grillparzer. This author wrote "I want to die / honestly / rather than be abandoned / tearfully" in one poem, and also penned an ode to Anactoria. Another of this author's poems asks "Let not my spirit be harnessed by this anguish / and affliction / But come here, by me as you did once before" and is addressed to the Goddess Aphrodite. Sometimes called the tenth muse, for 10 points, name this author who lived on Lesbos, a female Greek poet.

## ANSWER: Sappho

6. This band got an early hit with "Stupid Car", which appears on their first release, Drill. The promotional video of one single featured the singer in a white suit; that song, "Stop Whispering", and others off of Pablo Honey were poorly reviewed, but their second album, The Bends, produced the songs "High and Dry," "Just," and "Fake Plastic Trees." Their singles "Pyramid Song" and "Karma Police" appeared on Amnesiac and OK Computer. For 10 points, name this English band which released In Rainbows with optional payment and recorded the song "Creep".
ANSWER: Radiohead
7. Sleeping Beauty includes one of these for Garlands, and one named for Silver and Gold is frequently incorporated into The Merry Widow and was composed by Franz Lehar. This musical form traces its origins to the German landler and replaced the scherzo in some symphonies. Franz Liszt composed one named for Mephisto. Another composer wrote one representing the Danube River and one entitled Tales from the Vienna Woods. For 10 points, name this dance in $3 / 4$ time whose "king" is considered to be Johann Strauss.
ANSWER: Waltz [or Walzer]
8. This organization's first director was Ella Josephine Baker, and this organization joined with SNCC to organize the pioneering Albany Movement in 1961, which attempted to desegregate the namesake Georgia town. Weakened by the 1971 departure of Jesse Jackson's Operation Breadbasket, Ralph David Abernathy became this group's leader in 1968, and this organization played a key role in organizing the 1963 March on Washington. For 10 points, name this civil rights organization, founded by Martin Luther King, Jr. in 1957.
ANSWER: SCLC [or Southern Christian Leadership Conference]
9. The general equation for it features a quantity equal to the product of the permittivity constant, permeability constant, and the time derivative of the E-field, which vanishes in the absence of timevarying E-fields. That quantity was introduced in On Physical Lines of Force by James Maxwell, and is called the displacement current. For 10 points, identify this law which states that the magnetic field in a closed loop produced by a current is proportion to the current enclosed in the loop, and is named for a French scientist.
ANSWER: Ampere's Law
10. Its tributaries include the Salado, Conchos, and Puerco, and its basins include Lake Toronto and the Falcon Reservoir. Its sources lie in the San Juan Mountains, and its early course flows into the San Luis Valley. Before it flows into the Gulf Coastal Plain, this river flows into the Big Bend, and it is the fifth longest river in North America. For 10 points, name this river on which lie Ciudad Juarez and El Paso, the border between Mexico and the United States.
ANSWER: Rio Grande
11. One character in this novel slights another by remarking that he is no mood to prefer ladies slighted by other men. Later, the protagonist and two of her sisters wish to visit Brighton, and Lydia accepts an invitation from an officer's wife, and later runs away with Wickham. The protagonist of this novel is not intimidated by Lady Catherine's insistence that she reject a proposal so that Lady Catherine's daughter can marry the man that she loves. For 10 points, identify this novel about Elizabeth Bennett and Mr. Darcy, a work by Jane Austen.
ANSWER: Pride and Prejudice
12. He was victorious at a battle near Gniew over his cousin Sigismund III in a war that ended with the Treaties of Stzumska Wies and Altmark. He constructed a pontoon bridge over the Lech River to win the Battle of Rain. An equestrian statue with the inscription "Freedom of belief for all the world" commemorates his victory over Count Tilly's Catholic forces at Breitenfeld, and he was advised by Axel Oxenstierna. For 10 points, name this "Lion of the North," a king of Sweden who died at the Battle of Lutzen during the Thirty Years' War.
ANSWER: Gustavus Adolphus [or Gustav Adolf; or Gustav II; or Gustavus the Great; prompt on Gustavus]
13. When an exponent often added to generalize it is equal to gamma, the specific heat ratio, it describes any isentropic process. Deviations from this law that occur above the inversion temperature are modeled by the Joule-Thomson effect, and its constant of proportionality has units of energy and is given by the product of particle number, temperature, and the ideal gas constant. Increasingly accurate for low gases as altitude increases, for 10 points, identify the gas law which describes an inverse relationship between pressure and volume at fixed temperatures.
ANSWER: Boyle's law
14. One of these by Michel Chion includes a movement where a tape plays voices hissing and screaming the word "Sanctus," while an earlier one by Berlioz calls for four brass bands at each end of the stage. One includes a non-canonical Pie Jesu movement, while a more famous one includes an Agnus Dei written by Franz Sussmayr, and recycles its opening for the Lux Aeterna section. For 10 points, name these works which include the Dies Irae, a Roman Catholic mass for the dead which was set by Faure and Mozart, who died while writing it.
ANSWER: Requiem mass [or Messa da Requiem]
15. At efficiency in the Keynesian Cross, this equals the total output of an economy. An externality is beneficial if the social type of this is higher than the private type. A Giffen Good has an upward sloping curve that measures this, while Say's law states that this is created by the presence of a good. Price elasticity is computed by dividing change in price over change in this variable, which can be measured as an individual's marginal utility for consumption of a good. For 10 points, identify this measurement of desire for a good, often paired with supply.
ANSWER: demand [accept aggregate demand before "Giffen Good" is read]
16. One type of these substances forms in rock consisting of olivine and pyroxene, a basic rock known as peridotite. In addition to the harzburgitic variety, an eclogitic variety forms from the organic detritus pushed down by subduction. They are usually found in a blue igneous rock which forms at pipes and is called kimberlite, and calcite crystals mistaken for these substances were found in a volcanic tuff cone in Hawaii, a namesake "Head." For 10 points, name this allotrope of carbon, the hardest known naturallyoccurring mineral.
ANSWER: diamonds
17. This man met his wife while fighting in the War of Tatters, and he sacked Gualeguaychu while campaigning against Manuel Oribe in Uruguay. He won victories for the rebels at Luino and Mozzarone during the revolutions of 1848, but lost and was exiled when the French besieged his capital. He returned to lead the Expedition of the Thousand in 1860, and his military exploits coupled with the political machinations of Cavour led to the crowning of Victor Emmanuel II. For 10 points, name this leader of the Red Shirts, the "Father of Italian Independence."
ANSWER: Giuseppi Garibaldi
18. Rites in this religion include the Ritual For Evil Spirits and the Road Gods' Ritual. Along with water and salt, a wand with white paper streamers is often used in purification ceremonies in this religion, and its holidays include Adults Day, when those who have recently turned twenty begin wearing adult clothing. Its symbols include gates known as torii and shrines which are rebuilt every twenty years. It worships gods and nature spirits known as kami and has proven compatible with imported Buddhism. For 10 points, name this indigenous faith of Japan.
ANSWER: Shintoism
19. One writer from this country envisioned his poem "Siren" as the end result of a productive sleep, while another wrote about an "abiku" who frequents the bar Azaro in The Famished Road. A work set in this country focuses on the rivalry between Lakunle and Baroka over Sidi, while another work written by an author from this country concerns a character who beats his wife during the Week of Peace, and accidentally kills Ikemefuna's son when his gun explodes. For 10 points, name this country, the setting of Things Fall Apart, and the home of Chinua Achebe.
ANSWER: Nigeria
20. Three men on horseback with spears attack the title creature, which stands on top of an alligator, in this artist's painting The Hippopotamus Hunt. He painted a triptych including The Elevation of the Cross and The Descent of the Cross, and he taught Anthony van Dyck. His two versions of the Massacre of the Innocents were identified due to similarities to his painting of a strongman asleep in a woman's lap as a man perches over him with scissors, Samson and Delilah. For 10 points, identify this Baroque Flemish artist who painted many large, fleshy nudes.
ANSWER: Peter Paul Rubens [accept The Hippopotamus Hunt before it is read]
21. The origins of this former nation were laid at the Pittsburgh Convention of 1918, and Thomas Masaryk and Edvard Benes were among its leaders. In the Spring of 1968, this nation experienced a brief period of liberalization that was ended when Alexandr Dubcek was removed from power, and this country's region of Sudetenland was annexed by Nazi Germany in 1938. For 10 points, name this former Central European nation that broke into two republics following the Velvet Divorce, which came after the playwright Vaclav Havel helped lead the Velvet Revolution in 1989, a country whose capital was Prague.
ANSWER: Czechoslovakia [do not accept or prompt on "Czech Republic" or "Slovakia"]
22. Damgard's development of "claw-free" Hash functions was an important contribution to this field and essential to many techniques in this field are properties of the discrete logarithm, which are applied in a method named for Diffie and Hellman. One of the best-known algorithms in this field relies on the difficulty of factoring the product of two large primes, a public-key algorithm called RSA. For 10 points, identify this study of concealing communication, exemplified by Vigenere and Caesar ciphers.
ANSWER: cryptography [or encryption; accept word forms for either]

## 三 HSAPQ <br> High School Academic Pyramid Questions

1. It asserts that if $g$ of $x$ is equal to the integral from a constant to $x$ of $f$ of $t$, then the derivative of $g$ of $x$ with respect to $x$ is equal to $f$ of $x$. For 10 points each:
[10] Identify this incredibly important statement in single-variable calculus, which is really a special case of Stokes's Theorem.
ANSWER: first fundamental theorem of calculus
[10] If a vector field is conservative, then this type of integral from point $B$ to $A$ is equal to the value of their namesake object at A minus the value at $B$.
ANSWER: line integral or curve
[10] The application of the theorem requires that the function in question be this on a closed interval, meaning that at every point on the interval the left and right limits exist and are equal.
ANSWER: continuous
2. His operas based on historical figures include Satyagraha and Akhenaten. For 10 points each:
[10] Name this American composer who really likes arpeggios, as shown in his Symphony Number 5: Requiem, Bardo, and Nirmanakaya, as well as Einstein on the Beach.

## ANSWER: Philip Glass

[10] Philip Glass is an adherent of this movement, which emphasizes repeating simple patterns. Other composers in this style include Terry Riley, who wrote In C.
ANSWER: minimalism [accept word forms]
[10] This other minimalist composer wrote Clapping Music, along with a work where a string quartet plays with a taped string quartet and records of holocaust survivors, Different Trains.
ANSWER: Stephen Michael Reich
3. This author wrote a story about a soldier's weird relationship with a panther in "A Passion in the Desert." For 10 points each:
[10] Name this French writer, perhaps better known for novels such as Eugenie Grandet, Cousin Bette, and Cousin Pons.
ANSWER: Honoré de Balzac
[10] Beginning with The Chouans and including all of Balzac's novels, this fifty-three-member series was Balzac's attempt to portray all aspects of French society.
ANSWER: The Human Comedy [or La Comédie humaine; or The Comedy of Human Life]
[10] A retired vermicelli magnate gives up all of his money to his ungrateful daughters in this novel from the Human Comedy.
ANSWER: La Père Goriot [or Father Goriot; or Old Goriot]
4. Answer the following about a nomadic people, for 10 points each.
[10] They forced Emperor Theodosius to pay them tribute in 432, and the brother of their most famous leader, Bleda, was killed by his brother in 445.
ANSWER: Huns
[10] Pope Leo I supposedly talked this most famous leader of the Huns out of taking Rome.
ANSWER: Attilla
[10] The Roman general Orestes served as an assistant to Atilla. Orestes was also the father of this boy, the last Roman Emperor of the West.
ANSWER: Romulus Augustulus
5. One of the strongest "cargo cults" left in the world, devoted to American serviceman John Thrum, still honors his memory on this island chain. For 10 points each:
[10] Identify that island group, nicknamed the "Isles of Fire", and formerly known as the New Hebrides with its capitol at Port-Vila.

## ANSWER: Vanuatu

[10] Just east of Vanuatu lies this island nation, known for providing many UN peacekeepers, and whose largest island is Viti Levu, a popular tourist destination.
ANSWER: Fiji
[10] To the northwest of Vanuatu, across the Coral Sea, lies this large island that contains the Owen Stanley mountains as well as the Indonesian province of Irian Jaya.
ANSWER: New Guinea
6. Identify these novels by George Eliot, for 10 points each.
[10] Dorothea Brooke marries Casaubon, who is working on a "Key to All Mythologies," in this novel, which also includes the characters Lydgate and Will Ladislaw.

## ANSWER: Middlemarch

[10] The title character of this novel comes to love the little girl Eppie. Other characters include Squire Cass, whose son Dunstan disappears and whose other son is Eppie's father.
ANSWER: Silas Marner or the Weaver of Raveloe
[10] Set in St. Ogg's, this novel focuses on Maggie Tulliver, who elopes with Stephen Guest before drowning near the title river along with her brother Tom.
ANSWER: The Mill on the Floss
7. Their line began when King Henry IV appointed Frederick of Buren to a certain dukedom. For 10 points each:
[10] Frederick of Buren was the grandfather of this great Holy Roman Emperor, who had substantial conflicts throughout his reign with Henry the Lion.

## ANSWER: Frederick I or Frederick Barbarossa

[10] Frederick of Buren was appointed duke of Swabia, initiating this line of rulers that included Frederick Barbarossa, which gave way to a college of electors through the Golden Bull. ANSWER: House of Hohenstaufen [or Staufers; or Staufen; prompt on Swabian dynasty] [10] This alliance was formed in 1167 among the cities of the namesake Italian state to resist Frederick I and defeated Frederick at the 1176 Battle of Legnano.
ANSWER: Lombard League
8. When used as an adjective, it frequently refers to electrons in the outermost energy level of an atom. For 10 points each:
[10] Give the term that frequently refers to the number of bonds an atom may make, usually determined by its number of outer-shell electrons.

## ANSWER: valence

[10] Valence is most apparent in these diagrams, which show bonds as lines between atoms and draw lone pairs of unbonded valence electrons.
ANSWER: Lewis structures or diagrams or Lewis dot structures or diagrams
[10] The number of valence electrons present in the atom's free state, less the number of unshared electrons and number of bonds formed, gives this quantity for an atom in a compound.

## ANSWER: formal charge

9. This work uses metaphors of a divided line and the sun, in addition to describing people chained to a wall looking at shadows of a big fire. For 10 points each:
[10] Name this philosophical work that contains the Allegory of the Cave, a work about the titular political entity which would be ruled by philosophers.
ANSWER: The Republic [or Politeia]
[10] This man, who wrote about his teacher Socrates in many dialogues like the Meno and Parmenides, wrote the Republic.
ANSWER: Plato
[10] Also titling a work of Xenophon, this Platonic dialogue describes a dinner party at which characters like Plato, Alcibiades, and Aristophanes attempt to describe love.
ANSWER: The Symposium
10. This author of Tales of the Alhambra used pen names such as Lancelot Langstaff and Pindar Cockloft while writing for his satirical magazine Salmagundi. For 10 points each:
[10] Name this author, who wrote about a man who sells his soul for Captain Kidd's gold in the story "The Devil and Tom Walker."
ANSWER: Washington Irving
[10] In this Irving short story, the title character meets a group of mysterious Dutchmen playing ninepins in the Catskills and is given a drink that makes him sleep for twenty years.
ANSWER: "Rip Van Winkle"
[10] "Rip van Winkle" appears in this Irving book, written under the pseudonym Geoffrey Crayon. ANSWER: The Sketch Book of Geoffrey Crayon
11. They are, generally speaking, clouds of gas and dust; the Pillars of Creation are one well-known feature form the Horsehead one. For 10 points each:
[10] Identify these interstellar structures, which come in planetary types such as the Eagle, Lagoon, and Great Orion.
ANSWER: nebula
[10] This kind of nebula has high radio emission due to synchrotron emission, since the gas that makes them up was recently thrown off at relativistic speeds by a great explosion.
ANSWER: supernova remnant [or SNR]
[10] Though there's ongoing research into their causes, these events sometimes accompany type 1c supernovae, in which a huge amount of the namesake form of radiation is emitted.
ANSWER: gamma ray burst(er)s [or GRB]
12. It depicts a boy brandishing a pistol in each hand, as well as a man wearing a top hat holding a shotgun. For 10 points each:
[10] Name this painting commemorating the July Revolution, which allegorizes the title concept as a woman carrying the French flag.

## ANSWER: Liberty Leading the People

[10] Liberty Leading the People was painted by this French artist of The Massacre at Chios.
ANSWER: Eugene Delacroix
[10] Delacroix painted corpses writhing in agony in Hell in a painting of "the barque" of this author, whose major work was illustrated by Sandro Botticelli and Gustave Dore.
ANSWER: Dante Alighieri
13. Name the following about people involved in flaying other beings, for 10 points each.
[10] Susanowoo flayed a horse and threw the skin into this god's residence. She was born from the left eye of Izanagi, and is the sun goddess of Shintoism.

## ANSWER: Amaterasu

[10] Aloeus had his wife Eeriboea flayed alive for revealing to the gods that his sons Salmoneus, Otis, and Ephialtes had captured this god of war in a jar.
ANSWER: Ares
[10] This mythology's god Xipe Totec flayed himself alive in order to bring food to the people.
ANSWER: Aztec
14. It was reluctantly signed by John Quincy Adams, and helped Andrew Jackson win his first presidential term. For 10 points each:
[10] Name this tariff that substantially raised the rates of imported goods from England, which was strongly opposed by Southern planters.
ANSWER: Tariff of Abominations [accept Tariff of 1828]
[10] In response to the Tariff of Abominations, this South Carolina senator issued the "South Carolina Exposition and Protest," which proclaimed the doctrine of nullification.
ANSWER: John C. Calhoun
[10] The Tariff of Abominations sparked a debate between Senator Robert Hayne and this man, who also delivered the Seventh of March speech and was Secretary of State for Millard Fillmore.
ANSWER: Daniel Webster
15. The first person to hold this office was Hirobumi Ito. For 10 points each:
[10] Identify this political office, whose current holder recently resigned. Before him, the holder of this office was Shinzo Abe.
ANSWER: Prime Minister of Japan [or Kantei]
[10] This man, the head of the Diet, has recently resigned that position and is expected to be replaced by Toro Ase.
ANSWER: Fukuda Yasuo
[10] Fukuda Yasuo is a member of this party, which still holds power in the Japanese Diet, meaning that the next leader of this political party will retain the office of Prime Minister.
ANSWER: Liberal Democratic Party [or Jiyū-Minshutō]
16. Identify the following about Russian operas, for 10 points each.
[10] In this Tchaikovsky opera, Tatyana writes to the title character in the "letter scene." Later, the title character shoots his friend Lensky in a duel.

## ANSWER: Eugene Onegin

[10] In this only complete opera by Modest Mussorgsky, the title boyar becomes tsar when his sons Fyodor and Dmitry die.
ANSWER: Boris Godunov
[10] This Russian composer wrote the operas The Snow Maiden and The Legend of Tsar Saltan, which includes "The Flight of the Bumblebee."
ANSWER: Nikolai Rimsky-Korsakov
17. It centers on a rebellion led by Primus. For the stated number of points:
[10] For 10 , name this play in which nearly all of humanity is killed by beings manufactured at the factory of Harry Domin after Dr. Gall enables them to feel pain.
ANSWER: R.U.R. [or Rossem's Universal Robots]
[10] For 10, this Czech author wrote the plays The War With The Newts and The Makrapolous Affair and coined the term "robots" in his play R.U.R.
ANSWER: Karel Capek
[5/5] For 5 points per answer, at the end of R.U.R., Alquist compares the robots Marius and Helena to these two figures. One of them was created from the other's rib.
ANSWER: Adam and Eve
18. This psychologist proposed a series of conflicts, such as between generativity and stagnation, in a model of human development. For 10 points each:
[10] Identify this psychologist, who proposed eight stages of psycho-social development.
ANSWER: Erik Erikson
[10] The fifth stage of Erikson's model includes this experience, in which a person becomes confused about their self-image.
ANSWER: an identity crisis
[10] Erik Erikson also wrote a book about the "truth" of this historical figure, who promoted satyagraha and led nonviolent resistance against the British in India.
ANSWER: Mohandas Gandhi
19. Identify the following from electrostatics, for 10 points each.
[10] For two point charges, this quantity is given by the product of the charge and the distance separating them. It is symbolized $p$.

## ANSWER: dipole moment

[10] The torque on a dipole is calculated by crossing the dipole moment with this quantity. Considered as a measure of force acting on a unit charge, its units are Newtons per Coulomb.
ANSWER: electric field
[10] The dot product of the dipole moment with the electric field gives this quantity; it is the energy possessed by a system by virtue of its position, and is contrasted with the kinetic kind.
ANSWER: potential energy
20. Identify the following about Asian countries based on clues, for 10 points each.
[10] Mohammad Najibullah led this nation from 1986 to 1992 as the successor to Babrak Karmal. The Soviet-backed Najibullah was plagued by mujahideen rebels until his 1996 death.
ANSWER: Afghanistan
[10] This pro-Western shah of Iran led the White Revolution in an attempt to modernize his country. He was driven from office by Ayatolla Khomeini in the 1979 Islamic Revolution.
ANSWER: Mohammad Reza Shah Pahlavi [accept Reza or Pahlavi]
[10] This nation was led by the brutal megalomaniac Saparmurat Niyazov, who led this nation from the collapse of the Soviet Union until his 2006 death.
ANSWER: Turkmenistan
21. Answer some questions about genetic diseases with something in common, for 10 points each.
[10] This most common form of mental retardation is accompanied by decreased fertility and shorter lifespan and is caused by trisomy of chromosome 21.
ANSWER: Down's syndrome
[10] This disorder occurs only in males and results in hypogonadism, but also reduced rates of incidence of recessive traits like red-green colorblindness.
ANSWER: Klinefelter's syndrome
[10] This condition affects the heart and kidneys. Associated with trisomy of chromosome 18, it is usually fatal, as less than half of the babies affected survive beyond week one.
ANSWER: Edward's syndrome
22. This poem describes a character who "on honey-dew hath fed, and drunk the milk of Paradise." For 10 points each:
[10] Name this poem about a "stately pleasure-dome" in Xanadu.

## ANSWER: "Kubla Khan"

[10] This Lake Poet, the and author of "This Lime Tree Bower My Prison," "Frost at Midnight," and "Dejection," wrote "Kubla Khan."
ANSWER: Samuel Taylor Coleridge
[10] This Coleridge poem recalls that "slimy things did crawl with legs upon the slimy Sea" and that "a million million slimy things liv'd on-and so did I."
ANSWER: "The Rime of the Ancient Mariner"

