AHSAPQ
High School Academic Pyramid Questions

1. George Dumezil compared this figure to the Ossetic demon Syrdon. This god once impaled an eagle after the eagle ate too much of an ox he was eating; that adventure ended with him transforming Idun into a nut to rescue her from the giant Thiazi. After this god tricked Hodr, Hel offered to let a dead god return if every living thing would mourn, but Thokk, possibly this god in disguise, refused. For 10 points, name this god who until Ragnarok is chained to a rock with a snake dripping venom on him, the trickster of the Norse pantheon.
ANSWER: **Loki**

Bonus: He hung from Yggdrasil as an offering to himself. For 10 points each:
[10] Name this one-eyed chief god of the Aesir.
ANSWER: **Odin**
[10] Odin hung from Yggdrasil pierced by Gungnir, one of these objects. Gungnir was said to always hit its target when Odin threw it.
ANSWER: **spear**s

2. In one meeting held in this city, participants agreed to meet in Geneva to attempt resolutions to conflicts in Korea and Indochina. Another meeting in this city ended in Samoan independence, and a third was called to amend the Treaty of San Stefano. A fourth meeting in this city was called by Otto von Bismarck to set rules on the colonization of Africa. For 10 points, name this German city that after World War II was separated into West and East sections.
ANSWER: **Berlin**

Bonus: He met with Attila in 452 and persuaded him not to invade Rome. For 10 points each:
[10] Name this pope, the namesake of a prose style, who also interceded on behalf of the Romans when Geiseric sacked the city in 455.
ANSWER: **Leo I** [or **St. Leo**; or **Leo** the **Great**]
[10] Leo I's namesake Tome declared that Jesus had a divine and human nature, and that the natures existed in one person. That Tome was adopted by this 451 ecumenical council.
ANSWER: Council of **Chalcedon**

3. Edward Hoffman's biography of this man was entitled *The Right to be Human*. He believed in the concept of "peak experiences," and rejected determinism in his book *Motivation and Human Personality*. He examined biographies of Jane Addams, Abraham Lincoln, and Eleanor Roosevelt in formulating a concept that placed self-actualization at the top of a construct, below which were belongingness, food, and shelter. For 10 points, name this author of *Toward a Psychology of Being*, who formulated a namesake hierarchy of needs.
ANSWER: Abraham **Maslow**

Bonus: To test his theories, he traveled over four thousand miles by raft to the Tuamotu Islands. For 10 points each:
[10] This Norwegian ethnographer sailed across the Pacific unaided, proving that trade and cultural exchange between Polynesia and South America was possible.
ANSWER: Thor **Heyerdahl**
[10] The raft used by Heyerdahl for the voyage was named for this Incan sun god, who was supposed to have left ruins around Lake Titicaca.
ANSWER: **Kon-Tiki**

4. One equation named after Hammett can calculate an alternative to this quantity if the Henderson-Hasselbalch equation does not apply, and changes in this quantity resulting from temperature can be modeled using the Nernst equation. Ion-selective electrodes are used to measure it. Ketosis can lead to rapid drops of this quantity in the blood, in which this has a value of about 7.2. This quantity can be obtained by taking the negative base-ten logarithm of hydronium ion concentration. For 10 points, identify this chemical quantity that measures how acidic or basic a solution is and is equal to 7 for water.
ANSWER: **pH**

Bonus: This concept was first introduced by Rudolf Clausius, and it increases for an isolated system according to the Second Law of Thermodynamics. For 10 points each:
[10] Name this quantity, equal to the amount of thermal energy that is unavailable for useful work, a measure of the disorder or randomness of a system.
ANSWER: **entropy**
[10] In this thought experiment, the namesake creature is capable of differentiating fast and slow moving particles, and thus, could hypothetically defy the Second law of Thermodynamics.
ANSWER: **Maxwell's demon**

5. After serving as prime minister of this nation, Gro Harlem Brundtland became the director-general of the WHO, and liberal Prime Minister Johan Sverdrup attempted to place more power in the Storting in this country in the nineteenth century. The government of this nation oversaw secret negotiations between Israel and the PLO in 1993, and its Nasjonal Samling party was led by Vidkun Quisling. For 10 points, name this Scandinavian country whose capital's name was changed from Christiana to Oslo.
ANSWER: **Norway**

Bonus: One of them put forth the Lex Sempronia Agraria, a land redistribution measure, and another attempted to unite the plebs of equites. For 10 points each:
[10] Give the surname of these Roman politicians known for their attempts at social reform.
ANSWER: **Gracchi** [or **Gracchus**]
[10] This leader of a 71 BC slave revolt was killed in a battle with Crassus, after which 6,000 of his followers were crucified on the Capua to Rome highway.
ANSWER: **Spartacus**

6. John Grisby compared this character to a demonized version of the Norse goddess Freya. A novel written from the perspective of this character was written by the author of *On Moral Fiction*, John Gardner. This character is awoken by singing and merriment, and his rampage devastates Heorot. This character's destruction is finally ended by the arrival of a Geat who rips his arm off and decapitates him. For 10 points, name this demon, who terrorizes King Hrothgar before being defeated by Beowulf.
ANSWER: **Grendel**

Bonus: In one of his novels, the titular character joins Dutch Schultz's gang. For 10 points each:
[10] Name this author of *Billy Bathgate*, who wrote about the trial and execution of the Rosenbergs in *The Book of Daniel*.
ANSWER: E. L. **Doctorow**
[10] This novel by Doctorow is named for a style of music composed by Scott Joplin. It features the piano player Coalhouse Walker and the murder of architect Stanford White.
ANSWER: ***Ragtime**

7. De Bruijn defined a subset of these entities as "universally bad." These objects can be represented using twos complement notation. Any real number can be converted to a number of this type using a function symbolized by square brackets, and the set of these numbers is denoted Z. A Diophantine equation restricts the solution space to these numbers, and rational numbers can be expressed as a ratio of two of these numbers. For 10 points, name this set of numbers that includes zero, all natural numbers, and their negatives.
ANSWER: **integer**s

Bonus: According to the Goldbach Conjecture, all even numbers are the sum of two of these numbers. For 10 points each:
[10] Name these numbers, which can be found using the Sieve of Eratosthenes.
ANSWER: **prime** numbers [or **primes**]
[10] The distribution of the prime numbers is related to the zeros on the critical line of this German mathematician's namesake zeta function.
ANSWER: Bernhard **Riemann**

8. Lucan and Zosine are tutored by the pastor Pennhallow in a novel this author claimed to have translated from a French work written by Pierre Andrézel. In addition to *Angelic Avengers*, this author discussed how women were classified into guardian angels, prostitutes, and housewives in her essay *Daguerreotypes*. "The Supper at Elsinore" and "The Old Chevalier" are among her *Seven Gothic Tales*. For 10 points, name this author, whose time with Denys Finch Hatton on a Kenyan farm formed the basis of her major non-fiction work *Out of Africa*.
ANSWER: Isak **Dinesen** [or Karen **Blixen**; or Karen Christence **Dinesen**; or Baroness **Blixen**-Finecke]

Bonus: The title characters in this play constantly chant Brecece·cecs? cò·acs? cò·acs? For 10 points each:
[10] Name this play about Dionysus's attempts to bring Euripides from the underworld, which features a contest between Euripides and Aeschylus over the title of "Best Tragic Poet."
ANSWER: The ***Frogs**** [or *****Bátrachoi***]
[10] *The Frogs* was written by this Greek comic playwright of *The Acharnians*, *The Knights*, and *The Wasps*, who also wrote about some women boycotting sex in *Lysistrata*.
ANSWER: **Aristophanes**

Arts
Current Events
Geography
History
Literature
Math Calculation
Philosophy
Social Science

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9. In one of his music videos, children play soccer in front of army tanks and a cross burning, and that song begs "make it a better place/for you and me /and the whole human race." In addition to "Heal the World," this artist released a single that commands "keep on with the force" and was produced by Quincy Jones. That song, "Don't Stop 'Till You Get Enough," was released on *Off The Wall*. Another of his songs is about a girl who thinks he is the one, but the kid is not his son, and in another music video, he turns into a werewolf. For 10 points, name the singer of "Billie Jean" and "Thriller."
ANSWER: Michael Joseph **Jackson**

10. The Bay of Antongil is located on this country's east coast, and the island of Nosy-Be in this country was a stop on the Russian Baltic Fleet's journey to Japan. Prominent ethnic groups in this country include the Invincible and Inseparable Multitudes and the Elevated People, or Merina, and the main traditional deity of this country is Zanahary. Its large cities include Toliara, Antsirabe, Toamasina, and Fianarantsoa. For 10 points, name this island nation with capital at Antananarivo.
ANSWER: **Madagascar** [or **Malagasy Republic**]

11. One of this author's novels opens with a meeting at the Maypole Inn and includes the raven Grip. An unfinished mystery by this author ends abruptly after Datchery meets with an older woman and adds a chalk mark behind a door. This author of *The Mystery of Edwin Drood* wrote a novel about Kit's love for Nell Trent, *The Old Curiosity Shop*. In another of his novels, Fagin and Bill Sikes train a poor orphan to steal after that orphan is thrown onto the street for asking for extra porridge. For 10 points, name this British author of *Oliver Twist*, who wrote about Ebenezer Scrooge in *A Christmas Carol*.
ANSWER: Charles **Dickens**

12. When cobalt is added to this device, it can be described as "salted." Stanislaw Ulam developed a hypothetical method to propel spaceships using this kind of device, one type of which he helped develop along with Hungarian scientist Edward Teller. By removing the tamper, this device can be modified to emit large amounts of neutrons, which can harm nearby lifeforms but leave buildings standing, and famous devices of this type include Trinity, Little Boy, and Fat Man. For 10 points, name this device built by the Manhattan Project.
ANSWER: **nuclear** bomb [accept **nuclear** weapon; accept **nuke**; accept **atomic** bomb; accept **a-bomb**]

13. He wrote that "….society can prevent those who are manifestly unfit from continuing their kind" in his support for Virginia's forced sterilization policy in *Buck v. Bell*. He also wrote that, "The Fourteenth Amendment does not enact Mr. Herbert Spencer's *Social Statics*," in his dissent in Lochner v. New York. For 10 points, name this Supreme Court justice who in his opinion in *Schenck v. United States* formulated the "clear and present danger" doctrine, the son of a poet of the same name.
ANSWER: Oliver Wendell **Holmes, Jr.** [prompt on "Holmes"]

14. In one of this composer's oratorios, the title warrior sings "How vain is man who boasts in fight" before a chorus celebrates his victory with "See, the Conqu'ring hero comes." He adapted poems by John Dryden into the choral works *Alexander's Feast* and *Ode for St. Cecilia's Day*, and composed variations such as *The Harmonious Blacksmith*. This composer of *Israel in Egypt* and *Judas Maccabeus* created *Zadok the Priest* for the coronation of George II. For 10 points, name this 18th century composer of *Music for the Royal Fireworks*, *Water Music*, and *The Messiah*.
ANSWER: Georg **Handel**

Arts: This artist painted a man in blue rowing for a lady in a floral bonnet holding a toddler in pink in her *The Boating Party*. For 15 points, name this female American painter who moved to France to join the Impressionist movement.
ANSWER: Mary Stevenson **Cassatt**

Current Events: There has been speculation that she will run for an open Senate seat when Sam Brownback retires in 2010. For 15 points, name this governor of Kansas who is President Obama's pick to serve as the next secretary of Health and Human Services.
ANSWER: Kathleen **Sebelius** [or Kathleen **Gilligan**]

Geography: After the 1970 census, it was split it into 11 census areas, and 8 areas within it are recognized as meeting standards for incorporation. For 15 points, name this area of Alaska without an organized regional government.
ANSWER: **Unorganized Borough**

History: It was supposed to incite a revolt of uitlanders working under the Transvaal Republic, but the British failed miserably and surrendered to Piet Cronje. For 15 points, name this raid, one of the indirect factors in the start of the Boer War.
ANSWER: **Jameson** Raid

Literature: Young Reverend Clark comes from Westbury to pray for this story's dying title character. For 15 points, name this Nathaniel Hawthorne short story, whose title character one day places a piece of cloth over his face to symbolize secret sin.
ANSWER: "The **Minister's Black Veil**"

Math Calculation: The mean of three positive numbers is twice the median. For 15 points, if two of the numbers are 1 and 7, then what is the third number?
ANSWER: **34**

Philosophy: He explained Epicurean philosophy in the poem *On the Nature of Things*, or *De Rarum Natura*. For 15 points, name this Roman philosopher-poet.
ANSWER: Titus **Lucretius** Carus

Social Science: It states that the sum of all excess supplies must be equal to the sum of all excess demands, or that supply creates its own demand. For 15 points, name this law of markets named for a French economist.
ANSWER: **Say's** Law

15. In the Mexican-American War, the fall of this city directly preceded the attack on Chapultepec, and the Mexicans began a twenty eight day siege of this city as Mexico City fell. In another battle here, Ignacio Zaragoza led veterans of the Reform War in a successful effort that still failed to prevent the fall of Benito Juarez and the arrival of Emperor Maximilian. For 10 points, name this site of an 1862 battle against the French, perhaps most famous for occurring on Cinco de Mayo.
ANSWER: (Battle of) **Puebla**

Bonus: Its three central characters each pray to different deities after two are ordered to fight for the hand of the third. For 10 points each:
[10] Name this story about Palomon and Arcite, who duel for the hand of Emily. Arcite prays only for victory, and dies after winning, but before he can claim his prize.
ANSWER: The **Knight's Tale**
[10] This British author of *The Parlement of Foules* and *Troilus and Cressida* used the *Knight's Tale* to open his *Canterbury Tales*.
ANSWER: Geoffrey **Chaucer**
[10] This other Chaucer poem was written to commemorate the death of the wife of John of Gaunt. In it, a wandering poet finds a sorrowful knight who has lost his "good, fair White."
ANSWER: The **Book of the Duchess**

16. The point where this force intersects the midplane is known as the metacenter, which must lie above the center of gravity for an object in a fluid to be in static equilibrium. It arises because fluid pressure increases with depth due to the increasing gravitational weight acting on the fluid. The magnitude of this force can be calculated from the product of gravity, fluid density, and the volume of the submerged object using Archimedes' principle. For 10 points, name this force that is equal to the weight of the fluid an object displaces and allows objects to float on water.
ANSWER: **buoyant** force [accept **buoyancy**]

Bonus: Many Muslims perform wudu before touching it, and it was revealed to Muhammad by Gabriel. For 10 points each:
[10] Name this holiest book of Islam.
ANSWER: **Koran**
[10] The Koran is divided into these sections. The first is "The Opening" and the longest is "The Cow."
ANSWER: **Sura**s
[10] These writings are not included in the Koran but are oral sayings about the Prophet and his teachings. They are verified with chains of authority called isnads.
ANSWER: **Hadith**s

17. One of this author's novels is set in Grand Republic, where the title character discovers that he is one-thirty-second black. In addition to *Kingsblood Royal*, this author wrote about a student of Max Gottlieb in a novel about a doctor who discovers the X Principle, *Arrowsmith*. His title characters include a womanizing Methodist preacher and a realtor who realizes that he has sacrificed his dreams for mindless conformity and boosterism in Zenith. For 10 points, name this American author of *Babbitt* and *Main Street*.
ANSWER: Sinclair **Lewis**

Bonus: It comes in Becker's and Duchenne's varieties, and common symptoms include wasting of the limbs and difficulty breathing. For 10 points each:
[10] Identify this disorder characterized by atrophy of the skeletal muscle.
ANSWER: **muscular dystrophy**
[10] Deficiencies or mutations in this large protein, which is thought to protect against mechanical stress, cause different types of muscular dystrophy.
ANSWER: **dystrophin**
[10] This disorder can be a symptom of muscular dystrophy, but also occurs independently. This abnormal curvature of the spine can be corrected surgically or using a brace.
ANSWER: **scoliosis**

18. One artist from this country created *Collage with Squares Arranged According to the Laws of Chance*, and another depicted a giant sign floating in the air against a violent sky and above a horde of soldiers in *The Battle of Issus*. Another showed a man in a red cloak speaking the title phrase to Mary Magdalene, *Noli me tangere*, and painted a portrait of Henry VIII. This nation's school of Expressionism featured a movement that included Paul Klee called The Bridge. For 10 points, name this home country of Jean Arp, Albrecht Altdorfer, Hans Holbein the Younger, and Albrecht Durer.
ANSWER: **Germany**

Bonus: The national hero of this country is Skanderbeg. For 10 points each:
[10] Name this country, ruled from World War II until 1985 by the Maoist Enver Hoxha.
ANSWER: **Albania**
[10] Hoxha removed Albania from this defense alliance, the Eastern Bloc's answer to NATO. It was officially dissolved in 1991.
ANSWER: **Warsaw Pact**
[10] Proclaimed King of Albania in 1928, this man introduced a modern legal system to his country but was forced to flee Albania after the 1939 Italian invasion.
ANSWER: **Zog** [or **Ahmad Zogu**]

19. One book revered by adherents of this religion is the Kebra Nagast, and the oneness with the spiritual is expressed with the doctrine of "I and I." Dietary restrictions observed by some followers of this religion include a ban on cigarettes and coffee, and are known as Ital. Other important tenets of this religion include a rejection of "Babylon" and connection to Jah. For 10 points, name this religion whose adherents often wear dreadlocks and smoke ganja, which celebrates Grounation Day as the day Haile Selassie traveled to Jamaica.
ANSWER: **Rastafari**anism [prompt on **Rasta**]

Bonus: This composer included Russian liturgical music in his *Russian Easter Festival Overture*. For 10 points each:

[10] Name this composer of *Capriccio Espagnol*, whose operas include *Mozart and Salieri* and *The Golden Cockerel*.

ANSWER: Nikolai **Rimsky-Korsakov**

[10] The third act of Rimsky-Korsakov's *Tale of Tsar Saltan* includes this piece, which uses frantic runs of chromatic sixteenth notes to represent the buzzing of an insect.

ANSWER: "**Flight of the Bumblebee**"

[10] Rimsky-Korsakov collaborated on the opera *Mlada* with this Russian composer of the Polovtsian Dances and the tone poem *In the Steppes of Central Asia*.

ANSWER: Alexander **Borodin**

20. The Pax Nicepohori put this polity under Byzantine control and the remains of this place's Patron Saint were stolen from Alexandria. This city exchanged the sack of Zara for transportation during the Fourth Crusade, and its main governing body was the Council of Ten. It was divided between France and Austria by the Treaty of Campo Formio. For 10 points, name this Italian city-state, led until the eighteenth century by a Doge, which contains a lot of canals.

ANSWER: Republic of **Venice** [or **Venetia**]

Bonus: They are typically composed of two parallel conducting plates separated by a dielectric. For 10 points each:

[10] Name these circuit devices that are capable of storing electrical charge.

ANSWER: **capacitor**

[10] The amount of electricity needed to generate a change in the potential between the two plates of a capacitor is known as the capacitance, which is measured in this unit.

ANSWER: **farad**

[10] This constant of proportionality gives the tendency for electric polarization to occur in a dielectric in the presence of an electric field.

ANSWER: **permittivity**

21. This poem describes Ruth when "she stood in tears amid the alien corn," and references "the viewless wings of Poesy." The speaker feels he "Lethe-wards had sunk" and "my sense, as though of hemlock I had drunk" before wishing for a drink of Hippocrene to allow him to "leave the world unseen." It begins, "my heart aches, and a drowsy numbness pains." The poet later wonders "was it a vision, or a waking dream?" and proclaims "thou wast not born for death, immortal Bird!" For 10 points, name this John Keats ode about a songbird.

ANSWER: "**Ode to a Nightingale**"

Bonus: It saw action at Little Round Top and Missionary Ridge. For 10 points each:
[10] Name this 1863 Pennsylvania battle which featured Pickett's Charge.
ANSWER: Battle of **Gettysburg**
[10] The Union forces at Gettysburg were led by this lighthouse builder, who retained control of the Army of the Potomac, but was placed under Grant, after failing to pursue Lee after the battle.
ANSWER: George Gordon **Meade**
[10] This leader of the 20th Maine, who would go on to run Bowdoin College, led a bayonet charge down Little Round Top at Gettysburg.
ANSWER: Joshua Lawrence **Chamberlain**

22. This class of animals most likely evolved from the Rhipidistians, and other ancestors of this class include Acanthostega and Tiktaalik, which was recently discovered in the Arctic. This class, which possesses a unique three-chambered heart, includes the caecilians, who are worm-like, and they were the first tetrapods to evolve. Since they lack an amniotic egg, they must lay their eggs in water and undergo metamorphosis. For 10 points, name this animal class that can live on land and in water, which includes frogs.
ANSWER: **Amphibia**ns

Bonus: In one poem, this poet wrote that "when judgment day comes/ God will find six crumbs" in "little Effie's head." For 10 points each:
[10] Name this American poet who used unusual syntax in poems like "Buffalo Bill's/ defunct" and "anyone lived in a pretty how town."
ANSWER: Edward Estlin **Cummings**
[10] Cummings wrote a bizarre play based on this novel, whose subplots include Ophelia's education of Topsy and the death of Augustine St. Clare.
ANSWER: **Uncle Tom's Cabin**
[10] This other American author of *Black Boy* and *Native Son* wrote a series of novellas entitled *Uncle Tom's Children*.
ANSWER: Richard **Wright**

1. A muscular arm grabs a breast in his *Soft Construction with Boiled Beans*. This artist's *Temptation of St. Anthony* features a procession of elephants with long, spindly legs, and he painted a tiger leaping out of the mouth of a giant fish in midair, springing towards a reclining nude woman with a rifle to her neck. His controversial *Crucifixion* features Christ on a multidimensional cross, and he worked on films like *L'age d'or* and *Un chien andalou* with Luis Bunuel. For 10 points, name this artist who depicted some melting clocks in his *The Persistence of Memory*.
ANSWER: Salvador **Dali**

2. This disease has been linked to systematic defects in complex I of the mitochondrial inner membrane. Physiological signs of this disease include the accumulation of the protein alpha synuclein in deposits called Lewy bodies within the substantia nigra. It is characterized by the presence of bradykinesia. Treatment for this disease includes a combination of carbidopa and L-dopa, which address decreases in the neurotransmitter dopamine. For 10 points, name this disease that results from neural degeneration in regions of the brain that control movement.
ANSWER: **Parkinson**'s disease [or primary **parkinsonism**; or **paralysis agitans**]

3. Frau Rosalie's budding relationship with Ken Keaton is cut short by cancer in a Thomas Mann work titled after a black one of these creatures. The speaker of another poem says, "now my heart is sore" after looking at these creatures and hearing the "bell-beat" of their wings. In addition to that poem about nine and fifty of these creatures at Coole, a sonnet by Yeats describes Zeus' rape of Leda in the form of this creature. For 10 points, name this bird, the actual identity of the ugly duckling in a story by Hans Christian Anderson.
ANSWER: **swan**s

Extra 20-point bonus:
His namesake "line" was a string of fortifications designed to protect German retreat on the Western Front during World War One. For 10 points each:
[10] Name this German general, who also served as president of the Weimar Republic from 1925 to 1934.
ANSWER: Paul von **Hindenburg**
[10] Hindenburg's greatest military victory was this 1914 battle in which he decimated the Russian Second Army. A similarly-named 1410 battle saw the defeat of the Teutonic Knights.
ANSWER: Second Battle of **Tannenberg**

Extra 30-point bonus:

It equals the internal energy plus the product of pressure and volume of a system. For 10 points each:

[10] Name this quantity that represents the thermodynamic potential of a system.

ANSWER: **enthalpy**

[10] A process with positive change in enthalpy, such as ice melting, is known by this term.

ANSWER: **endothermic**

[10] This quantity is defined as enthalpy minus the product of entropy and temperature in Kelvin. It describes the amount of energy available to do work.

ANSWER: **Gibbs free energy**