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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 16**  **First Period, Fifteen Tossups** |

1. Dietrich Bonhoeffer's *The Cost of Discipleship* focuses on this event, which included a discussion of the “foolish man, who built his house upon the sand.” John Winthrop's “A Model of Christian Charity” echoes this event's message about a “city on a hill” and declaration that “you are the light of the world.” Its discusses the peacemakers and the meek, whom its speaker promised “shall inherit the earth.” The Eight Beatitudes were related in, for 10 points, what major address by Jesus in the Book of Matthew, delivered on the side of a hill?

ANSWER: The **Sermon on the Mount**

2. At this novel’s opening, it is noted that a wild rose-bush has taken root near the entrace to a local prison. One of this novel’s main characters is sworn to secrecy by a doctor who is actually her husband in disguise. Another character in this novel persuades Governor Bellingham not to take Pearl away from her mother. For 10 points, name this novel about the adulteress Hester Prynne written by Nathaniel Hawthorne.

ANSWER: *The* ***Scarlet Letter***

3. The city of Semipalatinsk in this country inspired a worldwide anti-nuclear movement after being subjected to hundreds of Soviet nuclear tests. This country's language is similar to Nogai Kipchak, and its highest point is Khan Tengri in the Tian Shan mountains. The Syr Darya flows east through this country from the northern Aral Sea. This home to Lake Balkash is the largest landlocked country in the world by area. Long led by Nursultan Nazarbayev, for 10 points, name this country whose capital was moved from Almaty to Astana in 1997.

ANSWER: **Kazakhstan**

4. This novel’s protagonist thinks about how his marriage has fallen apart while eating at Davy Byrne’s pub. It ends with the word “Yes,” the final word of a soliloquy given by the protagonist’s wife Molly. Set entirely on the day June 16, 1904, this novel follows Leopold Bloom. For 10 points, name this modernist novel by James Joyce, inspired by the *Odyssey.*

ANSWER: ***Ulysses***

5. In February 2013, this company was bought by 3G Capital and Berkshire Hathaway. On the cover of *The Who Sell Out.* Roger Daltrey is sitting in a tub of this company’s baked beans. This company’s potato products are sold under the Ore-Ida brand. It has naming rights to an NFL stadium where Troy Polamalu and Ben Roethlisberger play. For 10 points, name this Pittsburgh-based food company whose fifty-seven varieties include tomato ketchup.

ANSWER: H. J. **Heinz** Company

6. During one of these periods, the "anxious seat" technique was debated at the New Lebanon Conference. One of these periods was caused by Theodore Frelinghuysen's rise to prominence. The "burnt-over district" developed in New York during the second of these periods. In one of these periods, "old lights" clashed with "new lights" and Jonathan Edwards gave his "Sinners in the Hands of an Angry God" speech. For 10 points, name these periods of religious revival in Early American history.

ANSWER: **Great Awakening**s [or First **Great Awakening**; or Second **Great Awakening**]

7. The action of this compound can be inhibited by Raloxifine and Tamofixen. The synthesis of this compound includes an androstenedione intermediate in theca interna cells. This compound controls the thickening and growth of the endometrium. It's not progesterone, but a decline in this compound's synthesis causes menopause. Osteoperosis in older women is associated with a deficiency in it. For 10 points, name this female sex hormone which promotes ovulation.

ANSWER: **estrogen**

8. This man's headquarters, the Wolf's Lair, featured a heavy conference table, which saved his life when during the July 20 plot, a bomb went off in the room. He dictated his memoirs while in prison to his aide Rudolf Hess. That imprisonment came after this man's failed "Beer Hall Putsch" (poot-sch). This man committed suicide after marrying Eva Braun. He wrote the autobiography *Mein Kampf*. For 10 points, name this Nazi leader during World War II.

ANSWER: Adolf **Hitler**

9. This letter denotes algebras closed under countably many set operations. The spectrum of a matrix is denoted by this letter. Like pi for products, this letter appears to simplify certain lengthy expressions, in which case one writes the lower and upper bounds above and below its top and bottom arms. This letter is also used to represent the standard deviation. For 10 points, what letter denotes sums because it is the Greek equivalent of S?

ANSWER: **sigma**

10. In a painting by this man, a pulled-back curtain reveals a young boy pointing at his axe. Three old women look at the viewer while standing in front of Emmanuel Leutze’s *Washington Crossing the Delaware* in this Iowa native’s *Daughters of Revolution*. This Regionalist painter’s best-known painting shows his balding dentist holding a pitchfork in front of the title architectural style. For 10 points, name this painter of *American Gothic*.

ANSWER: Grant **Wood**

11. This politician studied ophthalmology in London until his brother Bassel died in a car accident. This man appeased intellectuals by releasing political prisoners from Mezze prison in a political “spring” in 2000. This man succeeded his father Hafez as leader of the Ba’ath Party. His army won a protracted siege of the city of Homs. The Al-Nusra Front and a “free army” oppose this man’s government in a civil war that has raged since 2011. For 10 points, name this President of Syria.

ANSWER: Bashar al-**Assad** [or Bashar Hafez al-**Assad**]

12. The Nike of Samothrace likely depicts this dynasty's loss at the Battle of Cos to Antigonus II Gonatus. One of its princesses left Thrace to return home and marry her brother, earning the derisive epithet “philadelphus.” The founder of this dynasty protected Rhodes during a siege by Demetrius, earning the title “Savior,” or “Soter.” That founder was a bodyguard of Alexander the Great who fought the Seleucids over Syria. The last queen of this dynasty lost at Actium with Marc Antony. For 10 points, name this Greek dynasty that ruled Egypt under Cleopatra.

ANSWER: **Ptolemiac** [or **Ptolemy**; or **Lagid**s]

13. At low Mach numbers, the coefficient of this force is roughly 0.47 for spheres. This force's magnitude is proportional to density times velocity squared times area according to Stokes's law. It has "form" and "skin" types. This force is minimized by streamlining objects. This force exactly counteracts gravity at the terminal velocity. For 10 points, name this force that opposes thrust for bodies moving through a fluid and is also called air resistance.

ANSWER: **drag** [or **air resistance** until it is read]

14. The narrator of this book arrives in a Belgian city that makes him think of a “whited sepulcher.” At this book’s end, its narrator tells another character’s fiancée that his last words were her name, though they were actually “The horror! The horror!” Its frame story concerns a group of sailors on the *Nellie*. For 10 points, name this book in which Marlow sails up the Congo River to find Kurtz, a novella by Joseph Conrad.

ANSWER: ***Heart of Darkness***

15. This building’s namesake musical “school” of medieval polyphony was led by Leonin and Perotin. It features a bell named “Emmanuel” in its South Tower. Eugene Viollet-le-Duc’s 1845 restoration is the true source of this building's many gargoyles. This building, one of the first to use flying buttresses, was begun in 1163 by Bishop Maurice de Sully was and completed in 1250. For 10 points, name this Gothic cathedral on the Ile de la Cite in central Paris.

ANSWER: **Notre Dame** Cathedral [or **Notre-Dame** de Paris]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 16**  **Directed Round** |

1A. The Shifta War was fought in Northern Kenya by a group with origins in what other African country, whose capital is Mogadishu?

ANSWER: **Somalia**

1B. What actor, who will play Lex Luthor in 2016’s *Batman v. Superman,* previously portrayed Mark Zuckerberg in *The Social Network?*

ANSWER: Jesse **Eisenberg** [Jesse Adam **Eisenberg**]

2A. What two-word English phrase is translated into Mandarin as “Shengri kuai le” (SHEN-juh-ruh kwai LUH) and istranslated in Spanish idomatically as “Feliz cumpleanos” (feh-LEECE coom-play-AHN-yoce)?

ANSWER: "**happy birthday** to you"

2B. What country's 2009 non-democratic change of government and subsequent violence in the San Pedro Sula area has caused it to be a major contributor to the U.S. border refugee crisis?

ANSWER: **Honduras**

3A. This is a 20-second calculation question. What is the range of the function given by "f of *x* equals 2 plus 4 times sine of 2 *x*"?

ANSWER: **-2 to 6, inclusive** [or **[-2,6]**; prompt on **-2 to 6**]

3B. This is a 20-second calculation question. Find the zeroes of the function given by f of *x* equals "*x* squared plus 4 *x* minus 12."

ANSWER: *x* = **-6** and *x* = **2**

4A. What book by Italo Calvino alternates between first chapters of fictional novels and sections written in the second person?

ANSWER: ***If on a winter’s night a traveler*** [or ***Se una notte d'inverno un viaggiatore***]

4B. In translation, which specific amino acid-carrying molecule binds to the P site at an AUG codon?

ANSWER: **tRNA** [or **transfer RNA**]

5A. Name the woman who was transformed into a weeping rock after boasting that her fourteen children made her superior to Leto.

ANSWER: **Niobe**

5B. What coinage law, an executive order by Andrew Jackson, required land payments be made in precious metal and led to the Panic of 1837?

ANSWER: **Specie Circular**

6A. Count Mole and Talleyrand oversaw the foreign affairs of what French “citizen king” who established the July Monarchy after succeeding Charles X?

ANSWER: **Louis Philippe** I of France

6B. What literary term denotes a figurative comparison between two things, usually using “like” or “as”?

ANSWER: **simile**

7A. Which illustrious family of Swiss mathematicians included Jacob, who developed the calculus of variations, and his brother Johann?

ANSWER: **Bernoulli** family

7B. What English director of *Blade Runner* and *Alien* won an Oscar for his depiction of Maximus’ vengeance against Commodus in *Gladiator?*

ANSWER: Ridley **Scott**

8A. This is a 30-second calculation question. A shelf contains two red books, three blue books, and one green book. What is the probability that the three books on the left half of the shelf are, in some order, a green book, a red book, and a blue book?

ANSWER: **3/10** [or **6/20**; or **36/120**; or **0.3**; or **30%**]

8B. This is a 30-second calculation question. A regulation baseball has a circumference of 9 inches. What is the surface area of the baseball, assuming the ball is perfectly spherical? Express your answer in terms of pi.

ANSWER: **81 over pi** square inches [or **81 divided by pi** square inches]

9A. What seismic scale differs from the Richter scale in that it measures the intensity, and thus the effects, of an earthquake?

ANSWER: Modified **Mercalli** Intensity scale [or **Mercalli**-Cancani-Sieberg scale; or **Mercalli**-Wood-Neumann scale]

9B. What largest of the Ryukyu Islands in southern Japan is known for a bloody two-month battle near the end of World War II, as well as the longevity of its native residents?

ANSWER: **Okinawa**

10A. What adjective describes the human body in the title of a Walt Whitman poem that declares, “The armies of those I love engirth me”?

ANSWER: **electric**

10B. What works of literature came in “mystery,” “morality,” and “miracle” genres in medieval England?

ANSWER: **play**s [or **theater**; or **drama**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 16**  **Third Period, Fifteen Tossups** |

1. This singer asks "Could I mistake myself for someone who lives behind my eyes?" in the song "Diary of a Madman." In another song, this singer describes "mental wounds not healing" and claims that he is "going off the rails" on the title vehicle. This singer was treated for rabies after biting off the head of a live bat in concert. For 10 points, name this singer of "Crazy Train" and frequent lead vocalist for Black Sabbath.

ANSWER: Ozzy **Osbourne** [or John Michael **Osbourne**]

2. In 1912, this man published an introductory guide to philosophical inquiry entitled *The Problems of Philosophy*. This man criticized Alexius Meinong's object theory in the essay "On Denoting" and wrote the essay "Why I Am Not a Christian." This man proposed a "system of types" to avoid his namesake paradox in a book written with Alfred North Whitehead. For 10 points, name this 20th century English philosopher who wrote *Principia Mathematica*.

ANSWER: Bertrand **Russell**

3. This man won the Nobel Prize for his experiments recorded in *The Work of the Digestive Glands.* This thinker said he "wouldn't even sacrifice a frog's leg" to the Russian social experiment. His namesake process is contrasted with an "operant" form. This man used a buzzer or bell to make certain animals salivate because they associated the sound with the serving of food. For 10 points, name this Russian famous for using classical conditioning experiments with dogs.

ANSWER: Ivan **Pavlov**

4. A man who held this position and who was known as “Czar Reed” once caused Democrats to try to hide under their desks during the “disappearing quorum” scandal in 1890. While holding this position, the dictatorial Joe Cannon had his power to name committee members stripped in 1910. This position follows the Vice-President in the order of presidential succession. For 10 points, name this position, the presiding officer of the lower house of Congress.

ANSWER: **Speaker** of the United States House of Representatives

5. This country’s first president was a member of the Big Six, and he was overthrown by a military coup while he was touring North Vietnam. A kingdom that was in this modern-day country was founded by Osei Tutu, who had a golden stool descend from the sky into his lap. The city of Kumasi was the capital of this country’s Ashanti Empire. This country was the British colony of Gold Coast until it was led to independence by Kwame Nkrumah. For 10 points, name this African country whose capital is Accra.

ANSWER: **Ghana**

6. This ruler's forces repelled the Siege of Pskov by Stefan Bathory, but he was still forced to sign the Peace of Jam Zapolski. The betrayal of close friend Andrei Kurbsky led this loser of the Livonian War to launch a brutal crackdown on the aristocracy, the Oprichnina. He created the Streltsy units and celebrated his capture of Kazan by building St. Basil's, whose architect he was erroneously said to have blinded. For 10 points, name this rage-prone Prince of Moscow and first Tsar of Russia.

ANSWER: **Ivan the Terrible** [or **Ivan IV** Vasilyevich; or **Ivan Grozny**]

7. Osheroff and Lee discovered that this element forms Cooper pairs at low temperatures, making a fluid with very low viscosity. Hans Geiger and Ernest Rutherford fired nuclei of this element at a gold foil sheet. It is the first element to have a full valence shell. Three nuclei of this element combine in the triple alpha process to make carbon. It can be formed in the fusion of hydrogen. For 10 points, name this lightest noble gas, which has atomic number 2.

ANSWER: **helium** [or **He**]

8. John Needham conducted experiments involving boiling broth solutions that appeared to support this idea, but Lazzaro Spallanzani's later modifications showed the opposite result. Francesco Redi challenged this theory by observing maggot growth on meat. The death knell for this theory was a series of experiments by Louis Pasteur in which a broth in a flask became cloudy only after the curved neck was broken off, allowing bacteria to enter. For 10 points, name this theory which postulated that living organisms could arise from nonliving matter.

ANSWER: **spontaneous generation** [or **anomalous generation**; or **equivocal generation**]

9. The speaker of this poem states, “An aged man is but a paltry thing, a tattered coat upon a stick.” In its final stanza, the speaker imagines becoming a golden bird in the title location. This poem opens with the line, “That is no country for old men,” which necessitates the title action. For 10 points, name this poem by William Butler Yeats about traveling by boat to a city that became Constantinople.

ANSWER: “**Sailing to Byzantium**”

10. The Lost Dutchman’s Gold Mine is generally thought to be located in a range east of this city, the Superstition Mountains. Jack Swilling founded this city after successfully building on ancient Hohokam irrigation canals. This city includes the community of Sunnyslope, noted for its wide diversity of cultures. This seat of Maricopa County lies in the “Valley of the Sun” within the Salt River Basin, between Flagstaff and Tuscon. For 10 points, name this capital of Arizona.

ANSWER: **Phoenix**, Arizona

11. Lysyl oxidase oxidizes this protein's fibrils outside the cell. The amino acids glycine and hydroxyproline are the most common in this protein, which has a triple helical structure. Scurvy is caused by an inability to synthesize this protein, since vitamin C is required for its biosynthesis. A large fraction of the extracellular matrix is composed of this fibrous protein. For 10 points, name this structural protein found in connective tissue, making it the most abundant protein in the body.

ANSWER: **collagen**

12. This author wrote about using clues from an earlier writer's *Mules and Men* to find a grave site in her essay “Looking for Zora.” Nettie reveals that missionaries have adopted the children of this author's most famous protagonist, who is raped by Alphonso and abused by Mr. Blank before beginning an affair with Shug Avery. For 10 points, name this African-American author of *The Color Purple.*

ANSWER: Alice **Walker**

13. An orbital resonance causes gaps to appear in the distribution of these objects, as discovered by Daniel Kirkwood. Lagrange's identification of two stable solutions to the three-body problem in the Jupiter-Sun system led to the discovery of the "Trojan" variety of these objects. The Titus-Bode law incorrectly predicted a planet where the largest example in the inner Solar System, Ceres, was discovered. For 10 points, name these objects that occur frequently in a namesake "belt" between Mars and Jupiter.

ANSWER: **asteroid**s

14. Caeneus was buried under rubble by a group of these creatures during a conflict depicted on the Elgin Marbles. That battle began after one of these creatures interrupted a Lapith wedding. One of them named Nessus tried to carry off Deianira, leading to the death of Heracles. The most famous of these beings tutored heroes like Theseus. Chiron was an example of, for 10 points, what half-horse, half-man creature from Greek myth?

ANSWER: **Centaur**s

15. The sixth and final composition of this type by Béla Bartók opens all four movements with a Mesto section. Bedrich Smetana represented his deafness with the first violin’s high E in one of these pieces, subtitled “From My Life.” Beethoven wrote three of these pieces for Count Razumovsky, and eighteen overall. It's not the symphony, but Haydn is considered the "father" of this form. For 10 points, name this musical form or ensemble consisting of two violins, a viola, and a cello.

ANSWER: **string quartet** [prompt on **quartet**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 16**  **Tiebreaker/replacement questions** |

1. This nation’s Mopti region was split in a 2012 conflict between the government and the Azawad rebels, who proclaimed their capital at Gao. One city in this nation, whose capital is Bamako, is home to the historic Sankore University, founded by Mansa Musa. For 10 points, name this West African nation home to the city of Timbuktu, whose namesake empire flourished in between the Ghana and Songhai empires.

ANSWER: **Mali** [or Republic of **Mali**] [or République du **Mali**]

2. The title character of this opera bemoans the contrast between her patriotism and her love in the aria “Ritorna vincitor.” In this opera, the high priest Ramfis questions a general after he refuses to escape with Amonasro. The male lead in this opera, Radames, is loved by Amneris, the daughter of the King of Egypt. For 10 points, name this Giuseppe Verdi opera whose title character is an Ethiopian princess.

ANSWER: ***Aida***

3. This city lost its slave class during the Nabis (NAH-biss) wars, and had previously put down a rebellion centered at Mount Ithome (eeth-OH-may). This city's youths were encouraged to declare the "krypteia" (crip-TAY-uh), a ritualized war, against conquered Messenians who comprised its slaves, known as helots (HEH-lots). For 10 points, name this Greek city whose "agoge" (uh-GOH-gay) system raised all boys from age seven to be full-time soldiers.

ANSWER: **Sparta**

4. This poet wrote the line, “And yet God has not said a word!” to conclude a poem spoken by a man who strangles his lover with her golden hair. This author of “Porphyria’s Lover” also wrote a poem spoken by the Duke of Ferrara, who says of his dead wife, “She had a heart—how shall I say?—too soon made glad,” and implies he had her murdered out of jealousy. For 10 points, name this Victorian poet whose dramatic monologues include “My Last Duchess.”

ANSWER: Robert **Browning**

5. On a Feynman diagram, electrons are represented by these shapes. Arthur Eddington proposed that entropy constituted one of these objects "of time", meaning that there is no time symmetry. In orbital diagrams, two of these objects are drawn on every orbital to represent electrons. Forces in free-body diagrams are represented using these objects. For 10 points, name these shapes which are used to represent vectors since they point in a particular direction.

ANSWER: **arrow**s

What organic compound, with formula C2H5OH, is extracted from corn or, more commonly, produced using yeast?

ANSWER: **ethanol** [or ethyl **alcohol**]

Find a number *x* such that 3 over quantity 2*x* plus 3 equals 2 over quantity *x* plus 3.

ANSWER: *x* = **3**