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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 25****First Period, Fifteen Tossups** |

1. The end of these structures in birds is accompanied by guiding feathers known as rectrices. In rabbits, these structures are sometimes called scuts. The presence of coccyx bone indicates that humans once had one of these. Monkeys and possums are able to grab onto objects with their prehensile example of these structures, which are curved forward and end in a venomous stinger for scorpions. For 10 points, name this flexible body part found on the backsides of many animals.
ANSWER: **tail**s

2. A player for this team hit a home run in the 1975 World Series when he "waved the ball fair." This team, which enjoyed the first half of Carlton Fisk's career, also employed a left fielder who was the last Major League player to have a .400 batting average in a season. In 2004, this team won its first World Series title in eighty-six years, breaking the "Curse of the Bambino." For 10 points, name this team that Ted Williams played for, which plays its home games in Fenway Park.
ANSWER: **Boston** Red Sox [or Boston **Red Sox**]

3. This country was called "the happiest barrack" thanks to its New Economic Mechanism. The fascist Arrow Cross party seized control of this country after the deposition of regent Miklos Horthy. This country's water polo team played the "blood in the water" match with Russia. Janos Kadar took control of this country after the failure of a revolution led by Imre Nagy. For 10 points, name this country where a 1956 anti-Soviet revolt occurred in Budapest.
ANSWER: **Hungary** [or **Magyarország**]

4. This physicist invented the torsion balance in order to develop his namesake law. An equation developed by this physicist uses a constant of one over four pi times the vacuum permittivity, which is equal to 8.99 times 10 to the 9 for SI units. That equation can be used to find the electric field by dividing it by a point charge. For 10 points, name this developer of the equation that gives the force between two point charges and namesake of the SI unit of charge.
ANSWER: Charles-Augustin de **Coulomb**

5. Eight soapstone bird sculptures were found at an abandoned city in this country, inspiring its national symbol. This country is the primary home of the Shona people. This country's northern border is formed by the Zambezi River and is the site of Victoria Falls. With its northern neighbor, Zambia, this country was part of the British colony of Rhodesia. For 10 points, name this African country whose longtime president, Robert Mugabe, rules from Harare.
ANSWER: **Zimbabwe** [Republic of **Zimbabwe**]

6. This poet claimed, “Love is not love which alters when it alteration finds” in a poem beginning, “Let us not to the marriage of true minds admit impediments.” In a poem by this author, he admits “that music hath a far more pleasing sound” than the voice of his beloved, whose eyes are “nothing like the sun.” He stated “thou art more lovely and more temperate” in the eighteenth of his 154 sonnets. For 10 points, name this poet who asked “Shall I compare thee to a summer’s day?”
ANSWER: William **Shakespeare**

7. A character in this novel decides to turn to God after meeting Varenka, the daughter of Madame Stahl. In this novel, Konstantin Levin marries Kitty. This novel begins, “Happy families are all alike; every unhappy family is unhappy in its own way.” Its title character commits suicide by jumping in front of a train. For 10 points, name this Leo Tolstoy novel named for a woman who falls in love with Count Vronsky.
ANSWER: ***Anna Karenina***

8. This man secured the Treaty of Heiligen with King Hemming, but Danish treachery forced him to rely on vikings to secure shipping routes. The Nazis tried to memorialize a massacre carried out by this man's troops at Verden after he put down Widukind's Saxon Revolt. This man's court included Alcuin of York and his biographer Einhard. Leo III crowned this father of Louis the Pious and son of Pepin as Holy Roman Emperor on Christmas Day in 800 CE. For 10 points, name this Carolingian Frankish king whose name means “Charles the Great.”
ANSWER: **Charlemagne**

9. Upon hearing about this man, Jesus decides to go back to Judea, justifying his actions by asking, “Are there not twelve hours of daylight?” It is when this man is shown to Jesus that the verse “Jesus wept” appears. This native of the town of Bethany, the brother of Mary and Martha, emerges from a cave he has been in for four days. For 10 points, name this character from the Gospel of John, a man who is raised from the dead by Jesus.
ANSWER: **Lazarus** of Bethany

10. The Republican convention for this election was held at Chicago's “Wigwam” and included Edward Bates, the eventual winner's Attorny General. This election included the “Great Apostate” from Tennessee who ran with Edward Everett, John Bell, as well as John C. Breckinridge. A fourth losing candidate in this election had earlier won a senate race in Illinois against its victor after a series of debates. For 10 points, identify this election year in which Stephen Douglas lost to Abraham Lincoln just prior to the Civil War.
ANSWER: Election of **1860**

11. The protagonist of this play gets fired by a man he claims to have named, and frequently has visions of his older brother Ben, who went to Africa. After its title character has an affair with a woman in Boston, he loses the trust of his son Biff. This play’s protagonist commits suicide with his car so his family can pick up his life insurance. For 10 points, name this play about Willy Loman written by Arthur Miller.
ANSWER: ***Death of a Salesman***

12. The southern portion of this modern-day country is home to the Carnatic musical tradition. Music from this country features a rhythmic tala often played on drums known as tablas, above which a melody is improvised conforming to modes known as ragas. This nation is also home to a Mughal-era mausoleum built by Shah Jahan for his wife. For 10 points, name this country that was home to the sitar player Ravi Shankar, as well as the Taj Mahal and Bollywood.
ANSWER: **India** [or **Bharat**]

13. In a painting by this artist, a man steps over a wall in the background and three women pray at the feet of the title subject. A group of onlookers watch Jacob wrestling the angel in this artist’s *Vision After the Sermon.* He depicted women representing the stages of life in *Where Do We Come From? What Are We? Where Are We Going?* This artist left Paris in the middle of his career to travel to Tahiti. For 10 points, name this French painter of *The Yellow Christ.*
ANSWER: Paul **Gauguin**

14. Pietro Cataldi discovered 10– and 12–digit examples of these numbers in 1588. The Arab mathematician Alhazen made a conjecture about even examples of these numbers that Euler later proved. It is unknown whether any of them are odd, though all even ones are known to be equal to p times p+1 over 2, where p is a Mersenne prime. The smallest of these numbers is 6, since it equals 1 + 2 + 3. For 10 points, name these numbers that are the sum of all their proper divisors.
ANSWER: **perfect** numbers

15. This man claimed that Republican relaxation of Wall Street regulations would put members of an audience "back in chains." In 2012, he was named the head of the Gun Violence Task Force created after the Sandy Hook Elementary School shooting. In that same year, this man engaged in feisty debates with his Republican counterpart and nominee, Wisconsin politician Paul Ryan. For 10 points, name this Delaware politician, Barack Obama's Vice-President.
ANSWER: Joseph "Joe" **Biden** Jr.

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 25****Directed Round** |

1A. Often referred to as the world's first novel, what Japanese classic by Lady Murasaki tells of the title prince's life in the Heian court?
ANSWER: *The* ***Tale of Genji*** [***Genji monogatari***]

1B. At what fortress overlooking the Dead Sea did 960 Jewish men, women and children commit mass suicide to avoid capture by the Romans in 73 CE?
ANSWER: **Masada**

2A. What confederation of market towns operated the Steelyard in London and controlled Baltic trade for several centuries?
ANSWER: The **Hanseatic League** [or the **Hansa**; or the **Hanse**]

2B. What current Prime Minister of Japan has developed a namesake economic policy which encourages moderate inflation in order to stimulate the economy?
ANSWER: Shinzo **Abe**

3A. This is a 20-second calculation question. If secant of *x* equals the square root of 11, what are the two possible values of tangent of *x*?
ANSWER: **positive or negative** square **root** of **10** [or **plus or minus** square **root** of **10**; or square **root** of **10 and negative** square **root** of **10**; or **positive or negative rad**ical **10**; or **plus or minus rad**ical **10**; or **rad**ical **10 and negative rad**ical **10**]

3B. This is a 20-second calculation question. In a game of Twister, players spin to randomly select one of sixteen possible combinations of color and extremity, for instance, "right hand red," or "left foot green." If each combination is equally likely, what is the probability of spinning "left hand blue" on two consecutive spins?
ANSWER: **1/256**

4A. Name the nymph that was transformed into a laurel tree after rejecting Apollo’s love.
ANSWER: **Daphne**

4B. What Scottish diarist is best known for his *Life of Samuel Johnson*?
ANSWER: James **Boswell**

5A. On what television show does Kerry Washington portray political fixer Olivia Pope? ANSWER: ***Scandal***

5B. What adjective refers to novels that depict the humorous adventures of a rogue hero, like Humphrey Clinker?
ANSWER: **picaresque**

6A. What modernist American poet wrote *The Cantos* and became a pro-Italian fascist during World War II?
ANSWER: Ezra **Pound**

6B. What traditional Argentinian dance was popularized by the composer and bandleader Astor Piazzola?
ANSWER: **tango**

7A. In German, what verb tense is formed by adding "-te" in the first or third person singular, or by adding "-test," "-tet," or "-ten" otherwise?
ANSWER: **simple past** tense [or **imperfekt**; prompt on **past** tense]

7B. What Indian city on the Deccan plateau has the nickname "Silicon Valley of India" and serves as capital of Karnataka state?
ANSWER: **Bangalore** [or **Bengaluru**]

8A. This is a 30-second calculation question. When the digits of a certain two-digit number are reversed, the result is exactly 7 greater than twice the original number. The sum of the digits is 11. What is the original number?
ANSWER: **38**

8B. This is a 30-second calculation question. The midpoints of two sides of an equilateral triangle are connected to form an isosceles trapezoid. If the original triangle has side length 8 inches, then what is the area of the isosceles trapezoid?
ANSWER: **12** times square **root** of **3** square units [or **12** times **rad**ical **3** square units]

9A. What kind of line segment has its two endpoints on a circle and thus includes the diameter?
ANSWER: **chord**

9B. Which organ in the GI tract is split into sections called the jejunum, ileum, and duodenum, and is where most food digestion and absorption takes place?
ANSWER: **small intestine** [or **small bowel**]

10A. What is the process by which the Earth's surface is worn away by wind, water, or other agents and which is typically paired with deposition?
ANSWER: **erosion**

10B. What shape were the original wooden walls of Jamestown Fort built in by the British colonists who settled there in 1607?
ANSWER: **triangle** [or **triangular**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 25****Third Period, Fifteen Tossups** |

1. In this novel, a woman named Ophelia becomes the tutor of the young girl Topsy. In this novel, Eliza runs away to find her husband George in Canada with her son Harry, finding refuge in a Quaker settlement. The title character of this novel is married to Aunt Chloe and saves Eva St. Clair when she falls into a river, but he is later beaten to death by Simon Legree’s overseers. For 10 points, name this anti-slavery novel by Harriet Beecher Stowe.
ANSWER: ***Uncle Tom’s Cabin***

2. This company was founded by a partnership that included Samuel Andrews and Henry Flagler. It was exposed in a series of *McClure’s* articles by Ida Tarbell. This company, which was founded in Cleveland, was sued by the United States in 1909 for violating the Sherman Anti-Trust Act, which led to its dissolution and the creation of companies that would become Exxon and Mobil. For 10 points, name this massive oil company founded by John D. Rockefeller.
ANSWER: **Standard Oil**

3. The lead salt of this anion precipitates out of both the anode and cathode of a lead-acid battery. Gypsum is the calcium salt of this polyatomic ion. The central atom of this anion forms six bonds but has a tetrahedral geometry. It is the conjugate base of a strong diprotic acid that dissociates twice in aqueous solution. Some specialized bacteria can reduce it to hydrogen sulfide. For 10 points, name this polyatomic anion with formula S–O 4 two minus.
ANSWER: **sulfate** ion

4. This author wrote about the Brangwen family in *The Rainbow* and its sequel, *Women in Love.* In another novel, he created the miner’s son Paul Morel. A notorious obscenity trial focused on his 1928 novel about the wife of Clifford who has an affair with the gamekeeper Oliver Mellors. For 10 points, name this English novelist of *Sons and Lovers* and *Lady Chatterley’s Lover.*
ANSWER: D. H. **Lawrence** [or David Herbert **Lawrence**]

5. This state’s capital merged with the former Ormsby County in 1969. Its short-lived Bullfrog County surrounded a planned federal waste facility located in Nye County. Nearly three-quarters of this state’s population lives in Clark County, which borders Lake Mead and contains a monorail that is actually within the suburb of Paradise rather than its namesake city. For 10 points, Yucca Mountain is in what gambling-heavy state whose largest city is Las Vegas?
ANSWER: **Nevada**

6. The conductor of this experiment was influenced by his girlfriend, Christina Maslach, to end it. Half of its participants received mirrored sunglasses for their role as "guards," one of whom earned the nickname "John Wayne." This experiment lasted for only six out of the intended fourteen days. For 10 points, name this study conducted by Philip Zimbardo in the basement of Jordan Hall at a West Coast univeristy.
ANSWER: **Stanford prison** experiment

7. This philosopher included the section "On Truth and Falsity" in a book discussing the different ways of understanding the phenomenon of melting candle wax. He begins that book by positing that a demon is deceiving him. This author of *Meditations on First Philosophy* wrote another book which promotes mind-body dualism. For 10 points, identify this French philosopher who declared "I think, therefore I am" in his *Discourse on Method*.
ANSWER: Rene **Descartes**

8. After Kaikeyi banished this hero to a forest, his brother placed his sandals on the throne of Ayodhya. This hero befriended a monkey god who had earlier tried to eat the sun. This blue-skinned, bow-wielding hero rescued his wife Sita from the demon Ravana. For 10 points, name this avatar of Vishnu, the hero and namesake of a Hindu epic.
ANSWER: Lord **Ram**a

9. The use of segmented mirrors that operate as a single unit was a major advance for these devices present in two named for Keck. An innovation in the design of these objects was the placement of a small, diagonally mounted mirror near the focus of the primary mirror by Isaac Newton. A convex objective lens and concave eyepiece were used for the first "refracting" examples of these devices, which was invented by Galileo. For 10 points, name these devices used to magnify objects in the night sky.
ANSWER: optical **telescope**s [or reflecting **telescope**s; or refracting **telescope**s]

10. This actor played a cameraman named Jack in *Hotel Rwanda.* This actor launched a hoax in which he claimed he was quitting acting for a career in hip hop, which was actually part of the faux-documentary *I’m Still Here.* In 2013, this man played a professional letter-writer who falls in love with an operating system named Samantha. For 10 points, name this actor who played Theodore in *Her* and the antagonist Commodus in *Gladiator.*
ANSWER: Joaquin **Phoenix** [Joaquin Rafael **Phoenix**] [or Joaquin Rafael **Bottom**; or Leaf **Phoenix**]

11. This man said “those who have served the revolution have plowed the sea,” lamenting the fact that his country had to break apart. Santiago Marino led a campaign that coincided with this man’s Admirable Campaign. This man held the Guayaquil Conference with Jose de San Martin. The Battle of Ayacucho was won by this man’s friend Antonio de Sucre. This man founded the Republic of Gran Colombia. For 10 points, name this liberator who is the namesake of a landlocked South American country.
ANSWER: Simon **Bolivar**

12. Paracelsus built on this concept when developing his mercury, sulfur, and salt model. Aristotle's *On Generation and Corruption* contains an explanation of this concept, to which he eventually added the aether. Aristotle also categorized its members as being hot or cold and wet or dry. This quartet was proposed by Empedocles and dominated science well into the Middle Ages. For 10 points, name this concept that consists of earth, wind, water, and fire.
ANSWER: the classical **element**s [or the four **element**s; or the four **root**s]

13. This ruler succeeded in forcing the Knights Hospitaller out of Rhodes, but his army was crushed in the later siege of Malta. This ruler executed his Grand Vizier, Ibrahim Pasha. This ruler was aided by Ebussuud Efendi in rewriting the qanuns. King Louis II of Hungary was killed by this man’s armies at the Battle of Mohacs. This ruler fell in love with a Slavic concubine named Roxelana. This ruler’s reform of administrative laws earned him the epithet “lawgiver.” For 10 points, name this great sultan of the Ottoman Empire.
ANSWER: **Suleiman the Magnificent** [or **Suleiman I**; or **Suleiman the Lawgiver** or **Kanuni Suleiman** until “lawgiver” is read]

14. This note’s major key names a symphony written in imitation of Charles Gounod by his student Georges Bizet. Terry Riley wrote a minimalist piece “in” this note. Gustav Mahler’s *Resurrection Symphony* is in this note’s minor key. This note is a tritone away from F sharp, and its minor key’s relative major is E flat. The lowest note on most flutes is this note’s “middle” version. For 10 points, name this note whose major key signature has no sharps or flats.
ANSWER: **C**

15. This activity is inhibited in people who have the prion disease FFI. K-complexes and spindles occur in one phase of this process. There is increased secretion of growth hormone during this process, and a myoclonic jerk can signal its onset. A large proportion of delta waves indicate its slow-wave or "deep" form. For 10 points, name this period composed of NREM and REM stages that takes place at night for most humans.
ANSWER: **sleep** [or **NREM** sleep until it is read]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 25****Tiebreaker/replacement questions** |

1. As a prince, this man plotted to flee to England and invade his own country, but when his scheme was discovered, his father forced him to watch the execution of his co-conspirator Hans Hermann von Katte. In 1740, this king ordered his army into Silesia to dispute the Pragmatic Sanction, sparking the War of the Austrian Succession. For 10 points, identify this well-educated Prussian king, whose military prowess and contributions to art earned him the nickname "Great."
ANSWER: **Frederick** the Great [or **Frederick** II]

2. This scientist proposed a massive beam projector "Peace Ray" that he called the Teleforce. Ten thousand Gauss is equal to a unit named for this physicist that is used to measure magnetic fields. This physicist patented a motor which used electromagnetic induction to turn a rotor. George Westinghouse adapted this man's ideas about alternating current in a celebrated feud with Thomas Edison. For 10 points, name this Serbian-American who devised a namesake coil.
ANSWER: Nikola **Tesla**

3. This city’s attractions include the shopping area Block Place and the Shrine of Remembrance, a memorial to World War I soldiers. Found on the lower banks of the Yarra River, this city is built around the natural harbor of Port Philip. It hosted the 1956 Summer Olympics, becoming the first city in the southern hemisphere to do so. It is the capital of a state south of New South Wales. For 10 points, name this capital of Victoria, the second-most populous city in Australia.
ANSWER: **Melbourne**, Australia

4. This opera quotes music from the now-obscure composers Giuseppi Sarti and Vicente Martin y Soler. In this opera, an attempted rape of Zerlina is broken up when Ottavio brandishes a pistol. The servant of its title character, Leporello, lists off a series of women in the “Catalogue Aria.” This opera ends with a stone statue dragging the protagonist to hell. For 10 points, name this Wolfgang Amadeus Mozart opera about a famed womanizer.
ANSWER: ***Don Giovanni*** [*Il dissoluto punito, ossia il* ***Don Giovanni***] [or *The* ***Rake Punished***] [or *Il* ***dissoluto punito***]

5. This poem juxtaposes the description "bent in the undergrowth" with the description "grassy and wanted wear." After admitting that his subjects are "really about the same," this poem's speaker ironically states he will be telling his story "with a sigh somewhere ages and ages hence." This poem is about pretending in retrospect that a trivial decision "has made all the difference." For 10 points, name this poem by Robert Frost about two paths in a wood.
ANSWER: "The **Road Not Taken**"

What Irish comic playwright wrote *The School for Scandal* and created Mrs. Malaprop in *The Rivals*?
ANSWER: Richard Brinsley **Sheridan**

A circle of diameter 8 inches is inscribed in a square. What is the area of the region inside the square but outside the circle? Express your answer in terms of pi.
ANSWER: **64 minus 16 pi** square inches