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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 24**  **First Period, Fifteen Tossups** |

1. Pope Marinus I reportedly gave this ruler a piece of the True Cross, while Pope Leo IV anointed this ruler as consul. This leader was defeated at Wilton but later rallied his forces at Egbert’s Stone and defeated Guthrum at the Battle of Edington. Following that victory, this monarch, who is often credited with founding the English navy, confined the Vikings within his nation to the Danelaw. For 10 points, name this monarch, the only English king to be styled “the Great.”  
ANSWER: **Alfred** the Great

2. This group placed some nobles under a platform and feasted on top of it after the Battle of the Kalka River. Leaders of this group were protected by the Kheshig guard and elected at Kurultai meetings. A leader of this people destroyed the Khwarezmian empire after they killed his ambassadors. Kingdoms founded by these people include Hulagu's Ilkhanate, Batu's Golden Horde, and the Chinese Yuan dynasty. For 10 points, name this nomadic people that was unified by Genghis Khan.  
ANSWER: Mongols [or Mongolians]

3. A conversation about Albert and Lil in this poem is repeatedly interrupted by the phrase "HURRY UP PLEASE ITS TIME." The final section of this poem cites the line, "London Bridge is falling down," and ends with the mantra, "Shantih shantih shantih." This poem's first section, "The Burial of the Dead," begins with the line, "April is the cruelest month." For 10 points, name this long poem by T. S. Eliot.  
ANSWER: "The **Waste Land**"

4. A character in this novel adopts the pseudonym Provis. Its protagonist’s sister becomes confined to her bed after being attacked by Orlick. A convict in this novel who makes his fortune in Australia is named Abel Magwitch. In this novel, Estrella is brought up to hate men by the reclusive Miss Havisham. For 10 points, name this novel in which Pip inherits a large fortune, a work by Charles Dickens.  
ANSWER: ***Great Expectations***

5. A law named for this physicist allows the curl of the magnetic field to equal one over the speed of light squared times the time derivative of the electric field. Maxwell added a term for displacement current to an equation formulated by this scientist, which related the line integral of the magnetic field to the current enclosed. An SI unit named after this physicist is defined as one Coulomb per second. For 10 points, name this Frenchman who names the SI unit of current.  
ANSWER: André-Marie **Ampere**

6. This player was the primary subject of the book *Game of Shadows.* This man is the godson of Willie Mays and the son of an All-Star outfielder named Bobby. This man was the first person to both steal four hundred bases and hit four hundred home runs in a career. He was indicted in 2007 as part of the investigation of BALCO, a steroid producing company near San Francisco. For 10 points, name this player who as of 2014 still holds the career home run record with 762 homers.  
ANSWER: Barry Lamar **Bonds**

7. This man’s politics were attacked in Margaret Chase Smith’s “Declaration of Conscience” speech. This man was denounced in 1954 episodes of Edward R. Murrow’s show *See It Now*, clips of which were used in the film *Good Night, and Good Luck*. Joseph Welch asked him “have you no sense of decency” during his investigation of the Army. For 10 points, name this Wisconsin Senator who led a search for Communists during the 1950’s.  
ANSWER: Joseph **McCarthy**

8. This culture’s underworld included an extremely cold house, a house full of knives, and a house full of bats. This culture’s primary mythical text was translated by Friar Francisco Ximenez into Spanish. These people’s god Hurakan is the etymological origin of the word 'hurricane.' These people wrote that the lords of Xibalba were defeated in a sacred ball game by two Hero Twins in their epic, the *Popol Vuh*. For 10 points, name this Mesoamerican culture which built temples to its gods at Chichen Itza.  
ANSWER: Quiche **Maya** [or **K’iche’**]

9. In this country, rickshaws are referred to as pousse-pousses, a hangover from its days as a French colony. The Merina people are among the Malagasy ethnic groups in this country, which is east of the Mozambique Channel and has its capital at Antananarivo. This country holds the world’s only native lemurs. For 10 points, name this island country found off the southeast coast of Africa.  
ANSWER: **Madagascar** [Republic of **Madagascar**]

10. The left background of this painting shows a large metallic rectangle in front of a body of water. The artist of this painting showed a fish amidst dozens of floating brick-like objects in an artwork depicting its “Disintegration.” A group of ants scurries around a watch in this painting, which also features a dying tree draped by a melting clock. For 10 points, name this painting by Salvador Dali.  
ANSWER: *The* ***Persistence of Memory*** [or *La* ***persistencia de la memoria***]

11. In Sikhism, this holiday commemorates Hargobind's escape from Jahangir and is celebrated as Bandi Shor. One portion of this holiday celebrates Bali's banishment to Patala after being tricked by the dwarf Vamana. The month of Kartik opens with this celebration, during which mithai sweets are consumed and sisters welcome brothers into their homes. Prayers to Lakshmi are offered as participants light the candles that give this holiday its name. For 10 points, name this Hindu festival of lights.  
ANSWER: **Diwali** [or **Bandi Shor** until mentioned; prompt on **festival of lights**]

12. The slope of a line in the x-y plane equals this function of the angle the line makes with the x-axis. A vector on a curve can always be decomposed into a normal component and a component of this type. The square of a function of this name equals secant squared minus one. This term refers to lines which touch a curve at a single point, as well as to a trigonometric function with period pi. For 10 points, name this function equal to sine divided by cosine.  
ANSWER: **tan**gent [or **tangential**; or word forms]

13. This author includes an overview of the Spanish Civil War and an interview that he conducted with Harry Kreisler as chapters of his 2013 manifesto *On Anarchism.* This supporter of Bosnian genocide denier Diana Johnstone often collaborates with Edward Herman, as on his book *Manufacturing Consent* and on an article alleged to minimize the atrocities of the Khmer Rouge. For 10 points, name this MIT linguist and left-wing intellectual leader.  
ANSWER: Noam **Chomsky**

14. A variant of this technique that exploits the function of antibodies is its "hot start" variant. Dyes like Sybr (cyber) green can be used when its targets need to be measured in real time in its quantitative version. A solution of magnesium chloride is often used in this technique, which exploits the temperature stability of Taq polymerase. Primers complementary to the target are used for this technique. For 10 points, identify this technique developed by Kary Mullis, a technique which uses thermal cycling to amplify strands of DNA.  
ANSWER: **PCR** [or **polymerase chain reaction**]

15. The side of a mountain named for this phenomenon receives precipitation, unlike the leeward side, when a rain shadow occurs. The Beaufort scale is used to classify this phenomenon based on sea conditions. The direction and magnitude of this phenomenon can be determined using a big conical tube called its namesake "sock". A common instrument used to measure it consists of hemispherical cups mounted on a stalk and is an anemometer. For 10 points, name this flow of gases that's largely a result of the uneven solar heating of the Earth's surface.  
ANSWER: **wind**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 24**  **Directed Round** |

1A. Julius Nyerere moved the capital of what East Africa country from Dar Es Salaam to Dodoma?  
ANSWER: **Tanzania**

1B. Name the leader of the Gerudo who tries to capture the Tri-Force and is a frequent antagonist to Link in the *Zelda* video game series.  
ANSWER: **Ganon**dorf

2A. In Java and C, what keyword is used to designate a function that has no return value?  
ANSWER: **void**

2B. What language has a written form called Modern Standard, as well as regional dialects like Levantine and Egyptian?  
ANSWER: **Arabic** [or al-**Arabiya**]

3A. This is a 20-second calculation question. Points A and B are chosen on circle O such that angle AOB measures 120 degrees and divides the circle into two sectors. The smaller sector is shaded. If segment AO measures 2 inches, what is the area of the shaded sector? Express your answer in terms of pi.  
ANSWER: **4 pi over 3** square inches [or **four-thirds pi** square inches; or **4 pi divided by 3** square inches]

3B. This is a 20-second calculation question. What is the mode of the following set of numbers: 8, 12, 7, 6, 5, 2, 8, 4, 6, 4, 8?  
ANSWER: **8**

4A. What term names the compound metaphors denoting various nouns commonly found in Old English poetry?  
ANSWER: **kenning**

4B. What polymer, also known as murein, forms a mesh-like arrangement outside the plasma membrane of bacteria, thus largely composing their cell wall?  
ANSWER: **peptidoglycan**

5A. Name the F. Scott Fitzgerald novel that depicts the decline of Dick and Nicole Diver’s marriage as they travel through Europe.  
ANSWER: ***Tender is the Night***

5B. What 1990 legislation outlawed discrimination against people with the title conditions, as well as mandating accommodations such as teletype machines and wheelchair ramps?  
ANSWER: **ADA** [**Americans with Disabilities Act** of 1990]

6A. What region located directly beyond Neptune contains many small, frozen objects including Pluto, Haumea, and Makemake?  
ANSWER: Edgeworth-**Kuiper** (KAYP-ehr) belt [prompt on **transneptunian** region]

6B. In which Shakespeare play does the title character exclaim, "A horse, a horse, my kingdom for a horse!" as he loses the Battle of Bosworth Field?  
ANSWER: ***Richard III*** [or *The Tragedy of King* ***Richard the Third***]

7A. Identify the Norwegian statesman who in 1946 became the first Secretary General of the United Nations.  
ANSWER: Trygve **Lie**

7B. The medieval poems *Romance of the Rose* and *Erec and Enide* were originally written in what language?  
ANSWER: Old **French**

8A. This is a 30-second calculation question. A lottery divides a cash prize equally among the winners. When there are *x* winners, each wins 2000 dollars. Find an expression, in terms of *x*, for the amount of money that each winner receives if there are instead *x*+2 winners.  
ANSWER: **2000*x* over** quantity ***x*+2** dollars [or equivalents to **2000*x*/(*x*+2)**]

8B. This is a 30-second calculation question. A ladder of length *l* leans against the wall at an angle alpha and contacts the wall 4 feet above the ground. If the cosine of alpha equals one-third times the square root of 5, what is *l*?  
ANSWER: **6** feet

9A. Ansel Adams' photographs of what national park include pictures of "Half-Dome" and 'El Capitan" rock formations?  
ANSWER: **Yosemite** National Park

9B. What man recently lost ownership of the Los Angeles Clippers after his racist remarks were made public?  
ANSWER: Donald **Sterling** [or Donald **Tokowitz**]

10A. What building does Ezra seek to rebuild in the Old Testament book of Ezra, before Nehemiah seeks to rebuild Jerusalem’s walls?  
ANSWER: the Second **Temple** [or **Beit ha-Mikdash**]

10B. What sea was once bordered to the south by Bithynia, Trebizond, Pontus, and other ancient regions of Anatolia?  
ANSWER: **Black** Sea [or the **Euxine** Sea]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 24**  **Third Period, Fifteen Tossups** |

1. This character is the only male who works at Associated Strategies. This character has declared that he invented the cotton gin, and that “the floor is lava,” during different games of True American. This character dated Elizabeth and Cece at the same time, and he subsequently moved out of apartment 4D, where he lived with roommates Nick and Jess. For 10 points, name this ladies’ man played by Max Greenfield on *New Girl.*  
ANSWER: **Schmidt**

2. A step in creating these molecules is carried out by a group of five molecules labeled U1 through U6, with no U3, that are called snRNPs (snurps). Seven-methyl-guanosine constitutes the five-prime caps of these molecules while their three-prime end contains runs of adenines in a poly-A tail. Introns are removed from this molecule in splicing. The information in these molecules is organized into codons that correspond to amino acids. For 10 points, name this type of RNA that is translated by ribosomes.  
ANSWER: **mRNA** [or **messenger RNA**]

3. In 2012, John Finnie resigned from a political party which supports this movement after it reversed its opposition to joining NATO. This movement promised a "day of reckoning" for corporations if it succeeded, but also planned to lower corporation tax to attract oil and finance business. The Better Together faction opposed this movement, which was led by Alex Salmond. For 10 points, name this movement which failed by a ten-point margin in a September 2014 referendum on leaving the United Kingdom.  
ANSWER: **Scottish independence** [or equivalents]

4. This man was replaced as First Lord of the Admiralty after Gallipoli. This man negotiated the Percentages Agreement with Josef Stalin. This man’s appeal to “give us the tools” led to the finalization of the Atlantic Charter in 1941. In a 1946 speech, this man declared that “an iron curtain” had covered eastern Europe. For 10 points, name this long-serving Conservative British prime minister, who led the country through World War II.  
ANSWER: Winston **Churchill** [Winston Leonard Spencer-**Churchill**]

5. Most of this city’s land is gathered into an area called the New Territories. This city’s district of Aberdeen is home to the popular Jumbo Floating Restaurant. Until 1994, this city was home to an incredibly dense and crime-filed “walled city.” The Kowloon Peninsula forms a large part of this Cantonese-speaking city, which is found in the Pearl River Delta. For 10 points, name this city in southern China, which was controlled by the British until 1997.  
ANSWER: **Hong Kong** [or **Xiang Gang**]

6. This element's carbonate ore is called siderite. Aluminum oxide is formed from aluminum, and this element's oxide, in the first step of the thermite reaction. This element's oxide was used as a catalyst in the Bosch process to improve nitrogen fixation. This element is the most common by mass on Earth, since it makes up the inner core, along with nickel. Its plus-two oxidation state is the ferrous ion. For 10 points, name this element which reacts with oxygen to form rust.  
ANSWER: **iron** [or **Fe**]

7. In this play, a man loses $6,500 after investing in a liquor store with Willy Harris. After the central characters of this play purchase a place in Clybourne Park, they receive a request not to move in from Mr. Lindner. It begins as the central family gets a check for $10,000 after the death of their patriarch. This play follows the black Younger family. For 10 points, name this play by Lorraine Hansberry.  
ANSWER: *A* ***Raisin in the Sun***

8. The first of these pieces, in E Major, features the violas imitating a barking dog, and the last one, in F minor, employs pizzicato to depict raindrops. These compositions were originally published with eight other concertos in *The Contest Between Harmony And Invention*, and were each prefaced by a sonnet likely written by the composer. For 10 points, name this quartet of violin concerti written by Antonio Vivaldi, with the titles “Spring,” “Summer,” “Fall,” and “Winter.”  
ANSWER: *The* ***Four Seasons*** [or *Le* ***Quattro Stagoni***]

9. An opera by this man depicts the simultaneous performance of a Greek tragedy and a comedy troupe led by Zerbinetta. This composer used a dissonant five-note chord to represent a vengeful daughter in *Elektra*. Another opera by this compoesr of *Ariadne auf Naxos* features the title character kissing the head of John the Baptist in the “Dance of the Seven Veils.” For 10 points, name this composer of *Salome* whose tone poems include *Also Sprach Zarathustra*.  
ANSWER: Richard **Strauss**

10. The Greenwich Tea Party took place in this state in 1774. Fort Nonsense and Jockey Hollow were part of a winter camp in this state near Morristown. One battle in this state featured a surprise attack on Hessian mercenaries, and a woman supposedly carried water to soldiers in the later Battle of Monmouth here. For 10 points, name this home of Molly Pitcher where, on Christmas 1776, George Washington crossed the Delaware just north of its capital, Trenton.  
ANSWER: **New Jersey**

11. This poet wrote the line, “We must love one another or die,” in a poem titled for the date of the beginning of World War II. Another of his poems describes Bruegel’s *Landscape with the Fall of Icarus* and begins with the line, “About suffering they were never wrong, the Old Masters.” For 10 points, name this English poet who wrote “September 1, 1939” and “Musee des Beaux Arts.”  
ANSWER: W. H. **Auden** [or Wystan Hugh **Auden**]

12. This ruler’s family was the subject of the Brunswick Manifesto, which threatened retribution if they were harmed. This ruler was discredited by letters found hidden in an iron chest. This man tried to flee to Montmedy, but was captured in the town of Varennes. This man’s wife allegedly said that peasants who did not have bread should eat cake. Members of “the Mountain” defeated the Girondins arguing that this man should be killed. For 10 points, name this husband of Marie Antoinette who was beheaded in the French Revolution.  
ANSWER: **Louis XVI** [prompt on **Louis**]

13. While searching for a woman brought to this location, Cadmus founded Thebes. That woman gave birth to Rhadamanthus after being carried to this location by Zeus in the form of a bull. Pasiphae was a queen of this location, where the inventor Daedalus built a structure to house a monster slain by Theseus. For 10 points, name this place ruled by Minos and home to the Minotaur's labirynth, the largest island in Greece.  
ANSWER: Isle of **Crete**

14. During a performance of a morality play in this novel, a crowd at the Palace of Justice crowns the title character the “Prince of Fools.” In this novel, Clopin, the king of the vagabonds, tries to hang the poet Pierre Gringoire. In this novel, the captain of the King’s Archers, Phoebus, is stabbed by Claude Frollo, who blames it on the gypsy dancer Esmeralda. For 10 points, name this Victor Hugo novel about the bell-ringer Quasimodo.  
ANSWER: *The* ***Hunchback of Notre Dame*** [***Notre-Dame de Paris***]

15. A constant times this quantity is found on the right hand side of the van der Waals equation. A Carnot cycle operates between two systems with different values for this quantity. The third law of thermodynamics concerns the entropy of a system when this quantity equals zero. The two most popular scales for it set their values based on the freezing and boiling points of water. For 10 points, name this quantity measured in degrees Fahrenheit.  
ANSWER: **temperature** [or **T**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 24**  **Tiebreaker/replacement questions** |

1. This man was accused of discarding an ally's standard from the wall of Acre and of conspiring to murder Conrad of Montferrat. As a result, he was kidnapped by Leopold V and held for ransom in Durnstein Castle for a year and a half. This leader of the Third Crusade fell short in several attempts to wrest Jerusalem from Saladin, and suffered a revolt from his brother John during his absence from England. For 10 points, identify this king with a courageous nickname.  
ANSWER: **Richard** the **Lion-heart**ed; or **Richard I**; or **Richard Couer de Lion**; prompt on **Richard**]

2. This artist depicted seven stage performers from the point of view of the three title performers in his *Orchestra Musicians.* At the center of another of his paintings, a man reads a newspaper as two men in bowler hats stand at a table filled with bales of white fluff. This painter of *New Orleans Cotton Exchange,* depicted a woman looking down at a glass of the title alcohol in *The Absinthe Drinker.* For 10 points, name this artist who painted many scenes of ballerinas.  
ANSWER: Edgar **Degas** [Hilaire-Germain-Edgar **De Gas**]

3. This poet recounted his childhood memories of “glory in the flower” and “splendor in the grass” in his “Ode: Intimations of Immortality.” He described himself as a “worshipper of Nature” in a poem written upon his return after five years to the title building on the banks of the Wye. This poet collaborated with his friend Samuel Taylor Coleridge on the collection *Lyrical Ballads.* For 10 points, name this British Romantic poet of “Tintern Abbey.”  
ANSWER: William **Wordsworth**

4. At this point, the van der Waals equation predicts a compressibility factor of 3/8. Reduced temperatures are calculated relative to this point. Carbon dioxide heated beyond this point is used to decaffeinate coffee beans. The vapor-liquid equilibrium line abruptly ends at this point on a phase diagram, since beyond this point, the fluid cannot be condensed. For 10 points, name this point which occurs at high pressures and temperatures.  
ANSWER: **critical** point [or **critical** temperature]

5. This philosopher argued that Man seeks to overcome challenges to satisfy his "will to power." This philosopher wrote about the Apollonian and Dionysian in art in his *The Birth of Tragedy*. This philosopher discussed the "Ubermensch" in his *Also Sprach Zarathustra*. For 10 points, name this philosopher who stated "God is dead" in his *The Gay Science*.  
ANSWER: Friedrich **Nietzsche**

What property, elucidated by Isaac Newton in his first law of motion, is absent in rotating or accelerating reference frames?  
ANSWER: **inertia**

Three fair dice are rolled. What is the probability that at least two dice show a six?  
ANSWER: **2/27** [or **16/216**]