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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 7**  **First Period, Fifteen Tossups** |

1. An early jetpack designed by Bell in the 1960s relied on the disproportionation of this compound into steam and oxygen gas. This reactive oxygen species is broken down by catalase in the body. This compound rapidly reacts with potassium iodide to create jets of foam. An extremely strong oxidizer, it's mixed with water in a common disinfectant. For 10 points, name this compound with formula H2O2, which is also commonly used to bleach hair.

ANSWER: **hydrogen peroxide** [or **H2O2** until it is read; prompt on **peroxide**]

2. A character in this play delivers a fanciful speech about the "fairies' midwife" named Queen Mab. In the opening scene of this play, Prince Escalus breaks up a fight instigated by Gregory and Samson. This play’s mood dramatically shifts with the deaths of Tybalt and Mercutio. For 10 points, name this Shakespeare play about two “star-cross’d lovers” from the Capulet and Montague families.

ANSWER: ***Romeo and Juliet***

3. This philosopher defined the property that brings both the object and its essence into existence as the “actus essendi.” This philosopher distinguished between irascible and concupiscible passions and wrote the missionary handbook *Summa Contra Gentiles.* This man referred to Averroes (AA-vuh-ROW-ess) as “The Commentator” in a book that offers five proofs for the existence of God. For 10 points, name this author of *Summa Theologica.*

ANSWER: Thomas **Aquinas**

4. Rulesets in this language consist of a paired selector and declaration block. This language relies on the box model, which involves specifying what happens at the content, padding, border and margin edges. This language was compartmentalized by a change that introduced "modules" to the third version of this language, which is overseen by the W3C. For 10 points, name this "stylesheet" language used to control the appearance of HTML and XML documents.

ANSWER: **CSS** [or **Cascading Style Sheet**s]

5. This country is bounded to the north by the Kattegat and Skagerrak straits. A notable World War I naval battle occurred near this country’s Jutland Peninsula. This country’s capital contains a statue of the Little Mermaid, which commemorates the fairy tale written by native author Hans Christian Anderson. For 10 points, name this smallest Scandinavian country with its capital at Copenhagen.

ANSWER: Kingdom of **Denmark**

6. Records of this institution appear in the Fournier Register, and this institution's power was expanded by the Ad extirpanda letter. A subset of this institution was authorized by Sixtus IV, used public rituals called the Auto-da-fe, and was once headed by Tomas de Torquemada. Galileo allegedly muttered "and yet it moves" while appearing before the Roman version of this institution. For 10 points, name this Medieval institution which targeted heretics which is best known for being implemented in Spain.

ANSWER: the **Inquisition** [or Spanish **Inquisition**; or Roman **Inquisition**]

7. In a novel by this author, one of the two title characters reads his brother Buddy’s letter while smoking in a bathtub. At the end of one of his novels, the protagonist watches a carousel spin around in Coney Island while his sister Phoebe rides it. This author of *Franny and Zooey* created a boy who drops out of Pencey Prep named Holden Caulfield. For 10 points, name this author of *The Catcher in the Rye.*

ANSWER: J. D. **Salinger** [or Jerome David **Salinger**]

8. This man stole a sword that was given by Frederick the Great to George Washington. He won the Battle of Black Jack and was supported by the Secret Six. In response to the Sack of Lawrence, this man had his sons murder some men with broadswords in the Pottawatomie Massacre. This man and his supporters were eventually surrounded by Robert E. Lee in a fire engine house. For 10 points, name this radical abolitionist who led a raid on Harper's Ferry.

ANSWER: John **Brown**

9. The polarity of binary groups of these things is opposite as observed by George Hale, the first to observe magnetic fields in them. Bands of these things first form at mid-latitudes and then migrate equatorially, as is depicted on butterfly diagrams. The relative absence of these things from 1645 to 1715 is known as the Maunder Minimum and these things wax and wane on an eleven year cycle. For 10 points, name these irregular dark regions that appear on the surface of the Sun.

ANSWER: **sunspot**s

10. Twenty-six years prior to becoming President, Woodrow Wilson wrote an article that founded the American study of these institutions. Parkinson's Law notes that these institutions always grow in size and complexity. These institutions have either "up-focused" or "in-focused" missions, are impersonal, and are hierarchical, according to *Economy and Society* by Max Weber. For 10 points, identify these management structures that may put up "red tape."

ANSWER: **bureaucracies** [or word forms]

11. This poem’s images include a “shape with lion body and the head of a man” and the “shadows of the indignant desert birds.” It ends by asking what “rough beast...slouches towards Bethlehem to be born?” Opening with the chaotic “turning and turning in the widening gyre,” this poem declares, “Things fall apart; the centre cannot hold.” For 10 points, name this apocalyptic poem by William Butler Yeats.

ANSWER: “The **Second Coming**”

12. This leader had a minister who was nicknamed “Chemical Ali” for using chemical weapons during the al-Anfal campaign. The manhunt for this person was codenamed Operation Red Dawn. This ruler’s army was bombed on the “Highway of Death” while retreating from an invasion of Kuwait. In an interview with Dan Rather, this man denied claims that his country had weapons of mass destruction. This man was hanged in 2006 after he was deposed in a 2003 invasion. For 10 points, name this dictator of Iraq.

ANSWER: Saddam **Hussein** [or Saddam **Hussein** Abd al-Majid al-Tikriti]

13. In a cabinet painting by this man, the sun is cut off by high walls, and two naked men wrestle while being by their warder. He depicted a limbless corpse being eaten by a bug-eyed Titan in his *Saturn Devouring His Son,* one of his fourteen *Black Paintings.* A white-clad man adopts Christ's pose as he faces a firing squad loyal to Napoleon in this artist's best known painting. For 10 points, name this artist who painted *The Third of May, 1808.*

ANSWER: Francisco **Goya**

14. After being promoted to a government post, this man is given the name Zaphnath-Paaneah. This father of Manassah and Ephraim is thrown into prison based on the false accusation of Potiphar’s wife. This man’s father believes him to be dead after seeing goat blood on his coat. His analysis of a dream in which seven thin cows eat seven fat cows impresses Pharaoh. For 10 points, name this favorite son of Jacob who is sold by his brothers into slavery in Egypt.

ANSWER: **Joseph**

15. In this film, Gunther is passionate about interior design, and another character is frustrated that "they just can't get his nose right." That character is knocked out by the frying pan-wielding protagonist and awoken by Pascal. After singing "Mother Knows Best," Mother Gothel kidnaps Flynn Rider after he and this film's protagonist watch the annual lantern ceremony, where they sing "I See The Light." For 10 points, name this 2010 Disney animated film originally titled *Rapunzel.*

ANSWER: ***Tangled***

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 7**  **Directed Round** |

1A. What country's civil war saw the Levellers publish “An Agreement of the People” and clashes between Cavaliers and Roundheads?

ANSWER: **England** [or modern equivalents including **Britain** or the **U**nited **K**ingdom]

1B. What 300 BC text by Euclid puts forth the definitions and axioms that are the basis of Euclidean geometry?

ANSWER: Euclid's ***Elements***

2A. Name the country artist whose hits include “The House That Built Me,” and who also plays in the band the Pistol Annies.

ANSWER: Miranda **Lambert** [Miranda Leigh **Lambert**-Shelton]

2B. What U.S. state was the site of Revolutionary War battles at Camden and Cowpens, and was where Francis Marion earned his nickname "The Swamp Fox"?

ANSWER: **South Carolina**

3A. This is a 20-second calculation question. A spinner is divided into 7 equal sections numbered "1, 2, 2, 3, 3, 3, 4." If you spin the spinner twice, what is the probability that the product of the numbers you land on is even?

ANSWER: **33/49**

3B. This is a 20-second calculation question. A bat and a ball together cost 10 dollars. The bat costs 4 dollars more than the ball. How much does the ball cost?

ANSWER: **3** dollars

4A. Name the ancient Persian monotheistic religion whose teachings center on the dueling gods Ahura Mazda and Ahriman.

ANSWER: **Zoroastrianism**

4B. If you are a "korol" (kuh-ROLE) in Russian, a "melech" (MEH-lek) in Hebrew, or a "re" (RAY) in Italian, then what are you in English?

ANSWER: a **king**

5A. In 1901, the Jacques de Morgan expedition discovered a stele at Khuzestan inscribed with what eighteenth-century BCE set of laws, the oldest known?

ANSWER: **code of Hammurabi** [or equivalents mentioning **Hammurabi**]

5B. Name the President of Iran who has taken steps toward liberalization and who signed the Geneva Interim Agreement on nuclear weapons.

ANSWER: Hassan **Rouhani**

6A. In poetry, what two-word phrase refers to unrhymed iambic pentameter?

ANSWER: **blank verse**

6B. What author described his love for Laura in the *Canzoniere*, a work written in vernacular Italian which first popularized the sonnet?

ANSWER: **Petrarch** [or Francesco **Petrarca**]

7A. Which biologist discovered penicillin in the *Penicillum notatum* fungus?

ANSWER: Alexander **Fleming**

7B. What bay near the Gulf of Maine separates the provinces of New Brunswick and Nova Scotia and is known for its high tides?

ANSWER: Bay of **Fundy**

8A. This is a 30-second calculation question. A triangle with vertices at (-5, -5), (-5, -10), and (-3, -8) is reflected about the x-axis and then translated five units to the right. Give *all three* vertices of the new triangle.

ANSWER: **(0,5), (0,10)**, and **(2,8)** [or any order of the three points; do not accept answers giving only one or two points]

8B. This is a 30-second calculation question. Let sine theta equal *z* and cosine theta equal the quantity 1 minus *z*. You can use trigonometric identities to find the only two possible values for *z*. What are they?

ANSWER: **0** and **1**

9A. What Jewish-American novelist wrote *Portnoy’s Complaint* and *American Pastoral*?

ANSWER: Philip **Roth**

9B. What villanelle by Dylan Thomas instructs the poet’s father to “rage, rage against the dying of the light”?

ANSWER: “**Do Not Go Gentle Into That Good Night**”

10A. Over 75% of Earth's volcanoes around found in what horseshoe-shaped area bounding the upper Pacific?

ANSWER: Pacific **Ring of Fire** [or the **circum-Pacific belt**; or the **circum-Pacific seismic belt**]

10B. A massacre on the Odessa steps occurs in what 1925 Sergei Eisenstein film that depicts a mutiny of Russian sailors?

ANSWER: ***Battleship Potemkin*** [or ***Bronenosets Po'tyomkin***]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 7**  **Third Period, Fifteen Tossups** |

1. Cholera researcher Waldemar Haffkine shocked the medical world after creating a vaccine for this disease in just three months of research in Mumbai. Its virulence relies on the LcrV and Yop proteins, resistance to it is conferred by a deletion known as CCR5 delta 32. It spreads through bites from *Xenopsylla cheopis*. The causative agent of this disease is *Yersinia pestis*, which causes swelling of lymph nodes in the armpits and groin. For 10 points, name this bacterial disease transmitted by rat fleas that devastated Europe as the Black Death.

ANSWER: bubonic **plague** [or **Black Death** until it is read; or ***Yersinia pestis*** until it is read]

2. This leader rejected media calls for an economic “U-turn” with a speech including a pun on the title of the play *The Lady’s Not for Burning*. This leader was Education Secretary during the leadership of Edward Heath. The National Union of Mineworkers led a strike during this Prime Minister’s term. The IRA attempted to kill this PM by bombing a hotel in Brighton. This leader dealt with Argentina’s invasion of the Falkland Islands. For 10 points, name this “iron lady” who served as British Prime Minister in the 1980s.

ANSWER: Margaret **Thatcher**

3. An active volcano in this country has led to several deaths due to *mazuku*, pockets of CO2-rich air that have swept into its town of Goma. That volcano, Nyiragongo lies near this country's eastern border north of Lake Kivu, which it shares with Rwanda. Livingstone and Boyoma Falls lie on the namesake river of this country, which borders Angola and the Central African Republic. For 10 points, name this African country once known as Zaire, whose capital is Kinshasa.

ANSWER: **Democratic Republic of the Congo** [or **DRC**; or **Congo-Kinshasa** until “Kinshasa”; prompt on **Congo**; do not accept “Republic of the Congo” or “Congo-Brazzaville”]

4. This man gave speeches like “The Prince of Peace” while touring on the Chautauqua speaking circuit. He resigned as Secretary of State after he disagreed with Woodrow Wilson’s policies during World War I. This staunch advocate of free silver clashed with Clarence Darrow as the prosecutor during the Scopes “monkey trial.” For 10 points, name this three-time Democratic and Populist nominee for president, best known for giving the “Cross of Gold” speech.

ANSWER: William Jennings **Bryan**

5. This quantity is equal to one over the square root of quantity permeability of free space times permittivity of free space. Objects that exceed this quantity for a given medium can emit the characteristically blue Cherenkov radiation. According to Einstein, this constant is a sort of universal speed limit since nothing can travel faster than it. For 10 points, name this quantity equal to approximately three times ten to the eighth meters per second, symbolized c.

ANSWER: **speed of light** [or **c** until it is read]

6. This number is returned for a number n and the difference between two numbers generated by a polynomial in Pollard’s rho algorithm. This number is equal to the last non-zero remainder given by Euclid’s Algorithm. For a prime p and any other number n that is not a multiple of p, this number is one. It is equal to two for the numbers two and four and equal to three for six and nine. For 10 points, what is the largest positive integer that divides two other numbers called?

ANSWER: **greatest common divisor** [or **gcd**]

7. This symphony’s slow third movement includes a solo for the fourth horn player. This symphony unusually places its D minor scherzo as the second movement. Leonard Bernstein conducted a historic performance of this symphony to celebrate the fall of the Berlin Wall. The fourth movement of this symphony is thematically similar to the first symphony of Brahms, and includes a vocal rendition of a poem by Schiller. For 10 points, name this symphony by Ludwig van Beethoven which includes the "Ode to Joy."

ANSWER: **Beethoven's Ninth** Symphony [or Ludwig van **Beethoven**'s Symphony Number **9**; or **Choral** Symphony; or Symphony Number **9** after "Beethoven" is read; or **Ninth** Symphony after "Beethoven" is read; prompt on Symphony Number **9** until "Beethoven" is read; prompt on **Ninth** Symphony until "Beethoven" is read]

8. Stephen Colbert performed a “ballad” about this person. The conflict concerning this person began over his use of the Bunkerville Allotment. After this man suggested that African Americans might have been better off as slaves, many of his supporters disavowed him. For 10 points, name this rancher from Nevada, who in April 2014 engaged in an armed stand-off with the Bureau of Land Management over his cattle-grazing practices.

ANSWER: Cliven **Bundy**

9. This disease can be diagnosed by an X-ray of the chest that reveals cavities, sometimes in the apex. The treatment for this disease typically includes isoniazid and rifampin, both antibacterials. An extract from the bacterium that causes this disease is injected into the skin in the Mantoux test. The BCG vaccine is used to immunize against it. The weight loss associated with this disease led to its historical name of consumption. For 10 points, name this infection of the lungs that causes patients to cough up blood and which is abbreviated TB.

ANSWER: pulmonary **tuberculosis** [or **TB** until it is read; or **consumption** until it is read]

10. In this culture’s belief system, the sun god created humans by sprinkling blood over broken bones. This people founded their capital where they saw an eagle eating a snake according to the orders of their war god, the “left-handed hummingbird.” They worshiped a feathered serpent who disappeared on a raft of snakes. For 10 points, name this Mesoamerican civilization that worshiped Huitzilopochtli and Quetzalcoatl.

ANSWER: the **Aztec**s

11. This sculpture was the brainchild of historian Doane Robinson, who attempted to get Lorado Taft to create it in the Needles. Hitchcock's film *North by Northwest* culminates in a chase scene at the site of this sculpture. After its sculptor died in 1941, this artwork was completed by his son Lincoln. This monument, whose designer, Gutzon Borglum, previously worked on Stone Mountain, is located in the Black Hills. For 10 points, name this large sculpture of four presidents in South Dakota.

ANSWER: Mount **Rushmore**

12. During the 1994 Eastern Conference semi-finals, this player dunked on Patrick Ewing, but did not win the series, after voluntarily benching himself in protest of a crucial play being drawn up for Toni Kukoc. In a Foot Locker ad, this player tells James Harden that he was the greatest player of all time for his NBA team. For 10 points, name this NBA hall-of-famer and long-time teammate of Michael Jordan with the Chicago Bulls.

ANSWER: Scottie **Pippen** [Scottie Maurice **Pippen**]

13. In this novel, a prophetic character foretells that another will see two hearses and be killed by a hemp rope. The Quakers Peleg and Bildad are a pair of businessmen in this novel. At its conclusion, the narrator is saved by the *Rachel* after the destruction of the *Pequod* by the title monster, who is ferociously hunted by Captain Ahab. For 10 points, name this Herman Melville novel about the hunt for a white whale.

ANSWER: ***Moby-Dick***

14. This country established religious freedom in a 1573 confederation, and its May 3rd Constitution of 1791 was the first in Europe. Its Union of Lublin was introduced by Sigismund II, the final Jagiellon, and established an elective monarchy dominated by the Sejm. This nation was under the control of foreign powers from 1795 until the end of World War I. For 10 points, name this nation which was partitioned three times by Austria, Prussia, and Russia, with capital at Warsaw.

ANSWER: **Poland** [or Kingdom of **Poland**] [or **Polish-Lithuanian Commonwealth**] [or Commonwealth of **Poland**]

15. At the end of a novel by this man, the protagonist retires from public life to join a monastery near Lake Como after falling in love with Clelia Conti. This creator of Fabrizio del Dongo also wrote about a man who impregnates Mathilde de la Mole in a novel whose two title colors represent the secular and clerical values of Julien Sorel. For 10 points, name this French author of *The Charterhouse of Parma* and *The Red and the Black*.

ANSWER: **Stendhal** [or Marie-Henri **Beyle**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 7**  **Tiebreaker/replacement questions** |

1. Some more recent editions of this novel give co-writing credit to the author’s husband, who wrote its famous preface. Climactic events in this novel include the murder of the protagonist’s wife Elizabeth Lavenza. This novel is framed by letters from Captain Robert Walton, who rescues the title scientist in the Arctic. For 10 points, name this novel by Mary Shelley about Victor, who creates a monster.

ANSWER: ***Frankenstein***

2. In this state, the Greenwood district, also known as the “black Wall Street,” was burned to the ground in a 1921 race riot. This state’s capital was home to an incident in response to the Waco siege, in which Terry Nichols helped a domestic terrorist use a truck bomb to kill 168 people in and around the Alfred P. Murrah Federal Building. For 10 points, name this state, where a 1995 bombing was carried out by Timothy McVeigh.

ANSWER: **Oklahoma**

3. This property of a crystal is maximized in either face-centered cubic or hexagonal-close-packed configurations. For an ideal gas, this quantity equals the molar mass times pressure over RT. The difference in this quantity between the fluid and an object gives the buoyant force in Archimedes' principle. For two immiscible solutions, the one with a lower value for this intensive property will form the top layer. For 10 points, name this quantity equal to mass over volume.

ANSWER: mass **density** [or **number** density until "RT" is read; or packing **efficiency** until "RT" is read]

4. Norway claims a region of this place named for one of its queens, Queen Maud Land. This place’s most active volcano is Mount Erebus, and its largest lake, Lake Vostok, is over two miles below the surface. This continent is cut into by the Ross and Weddell Seas, and was traversed by Roald Amundsen from 1910 to 1912. For 10 points, name this continent that encompasses the South Pole, largely covered by ice.

ANSWER: **Antarctica**

5. Whether or not chairs may be used during this activity is a major dispute within Sikhism, which performs this activity in a "langar" (LON-gar). In Islam, this activity is done during both "suhoor" and "iftar." In Judaism, a prescribed form of this activity is done by following a Haggadah on the first night of Passover. For 10 points, name this activity done at a seder by Jews and avoided during daylight in Ramadan by Muslims.

ANSWER: **eating** [or having a **meal** or equivalents]

What American Indian tribe did Geronimo and Cochise represent when fighting wars with the U.S. Army?

ANSWER: **Apache**

A poll reports that exactly 50% of voters voted for Candidate A and 50% voted for Candidate B, and reports a margin of error of 10%. Assuming that margin of error is obtained by constructing a 95% confidence interval, how many voters did the poll sample?

ANSWER: **100** voters [or **96** voters]