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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 18**  **First Period, Fifteen Tossups** |

1. This composer’s first symphony was disastrously premiered by a drunken Alexander Glazunov. An excerpt of his *Morceaux de Fantasie* was nicknamed “Bells of Moscow” and became his most popular encore. This composer of the *Prelude in C sharp Minor* used the *Dies Irae* in many piece, including one based on the twenty-fourth Caprice of a certain violinist. For 10 points, name this Russian composer of four piano concertos and *Rhapsody on a Theme of Paganini*.

ANSWER: Sergei **Rachmaninoff** [or Sergei Vasilievich **Rachmaninoff**]

2. While in France, this man defended the French Revolution in *The Rights of Man*. He also wrote a work advocating deism instead of organized religion; this was his *The Age of Reason*. Another work written by this man scoffed at the idea of an island ruling a continent and proclaimed that “these are the times that try men’s souls. For 10 points, name this author of *The Crisis*, an Englishman who wrote the pamphlet *Common Sense*.

ANSWER: Thomas **Paine**

3. This author wrote, “How shall I greet thee? With silence and tears,” at the end of his poem “When We Two Parted.” This poet wrote of a woman who has “a heart whose love is innocent” in a poem beginning, “She walks in beauty, like the night.” For 10 points, name this noble, an English Romantic poet who depicted an easily seduced man in the comical epic *Don Juan.*

ANSWER: Lord **Byron** [or George **Gordon** Byron, 6th Baron Byron]

4. Zakumi, a yellow leopard with green hair, was this event's mascot. Stadiums used in this event were located at Rustenburg and Port Elizabeth. In the second stage of this event, Jorge Larrionda denied Frank Lampard, spurring the use of goal-line technology. During the final of this event, Andrés Iniesta scored on goalkeeper Maarten Stekelenburg in the 116th minute. For 10 points, name this soccer competition which was attended by vuvuzela-blowin fans and won by Spain.

ANSWER: **2010** FIFA **World Cup** [or obvious equivalents mentioning **South Africa** hosting a **World Cup**; prompt on **World Cup**]

5. After this leader gave a speech at the Tororo Barracks, British Prime Minister Edward Heath allowed 30,000 of his former citizens into Britain. This leader faced an invasion from Julius Nyerere and neighboring Tanzania during the chaos caused by his mass expulsion of ethnic Asians in his country. This veteran of the King's African Rifle overthrew Milton Obote and was accused of being a cannibal. For 10 points, name this dictator of Uganda.

ANSWER: Idi **Amin** Dada

6. This process is controlled in part by namesake "factors" that have leucine zippers or zinc fingers. It is often initiated in eukaryotes when a TFIID subunit interacts with the TATA box. In prokaryotes, it begins when a holoenzyme forms after a core enzyme binds a sigma factor. Its reverse form is used by retroviruses. This process is enzymatically carried out by RNA polymerase. For 10 points, name this process in which DNA is converted into mRNA, thus often preceding translation.

ANSWER: **transcription**

7. In the prologue to this novel, its protagonist recalls encountering a tall, blonde man in the dark, shortly before claiming that he has lined his room with 1,369 lightbulbs. This novel’s first chapter, “Battle Royal,” is often excerpted on its own. At its end, Ras the Exhorter leads a race riot in Harlem. Its title character joins the Brotherhood and is a nameless black man. For 10 points, name this novel by Ralph Ellison.

ANSWER: ***Invisible Man*** [do not accept "The Invisible Man"

8. The hyperbolic version of this function is the average of e to the x and e to the minus x. This non-reciprocal function is positive in quadrant IV. The first terms of this trigonometric function's Taylor expansion is one minus x-squared over two. c-squared equals a-squared plus b-squared minus 2ab times this function of angle C, according to its namesake law. For 10 points, name this function equal to the adjacent side of a right triangle divided by its hypotenuse.

ANSWER: **cos**ine

9. Elizabeth Loftus studied the problems of this phenomenon by using false information to cause retroactive interference. Ways to improve this process include "chunking" and the "method of loci." George Miller argued that the capacity of one form of this process is "seven, plus or minus two" items. For 10 points, name this mental process that has short-term and long-term forms, and is disrupted in people with amnesia.

ANSWER: **memory**

10. The rate of this process is in the numerator of the Nusselt number. This process is governed by a coefficient symbolized h which has units of watts per meters squared Kelvin. Newton's law of cooling is valid for this type of heat transfer. The occurrence of this process in the Earth's mantle drives the movement of tectonic plates. This form of heat transfer requires a fluid to transport mass. For 10 points, name this form of heat transfer contrasted with radiation and conduction.

ANSWER: **convection** [or **convective** heat transfer]

11. The tallest building in this city is a narrow glass pyramid designed by Renzo Piano known as the Shard. Other tall structures in this city include a giant Ferris wheel known as its namesake “Eye” and a clock tower at the north end of the Palace of Westminster known as Big Ben. Both of those structures in this city lie along the River Thames. For 10 points, name this capital of the United Kingdom.

ANSWER: **London**

12. Metaneira prevented this goddess from burning away the mortal parts of Demophoon. In her depression, this goddess accidentally ate the shoulder of Pelops. She turned Ascalaphus into an owl for revealing that her daughter ate pomegranate seeds, and Helios informed this goddess that her daughter had been kidnapped by Hades. For 10 points, name this mother of Persephone and Greek goddess of agriculture.

ANSWER: **Demeter**

13. This philosopher's "Of the Conduct of the Understanding" was published by his nephew Peter King after his death. This man stressed the importance of a "sound mind in a sound body" for learning in *Some Thoughts Concerning Education/* This man attacked the notion of innate ideas, arguing that the mind at birth was a "blank slate", or tabula rasa. For 10 points, name this 17th century English philosopher and author of *An Essay Concerning Human Understanding.*

ANSWER: John **Locke**

14. A common form of this process uses uranium-238 and lead-206 or potassium-40 and argon-40. Using fossil assemblages, it's possible to accomplish this task accurately using biostratigraphy. The relative form of this process is no longer often performed, but can be done by noting that sediments are originally deposited in horizontal layers and then using the principle of superposition. For 10 points, name this process whose absolute form can be done by analyzing the decay of radioisotopes like carbon-14.

ANSWER: **dating** [or obvious equivalents, such as determining the **age** of rocks]

15. This country was unable to regain lost territory in the Peace of Hamburg despite winning the Pomeranian War against Prussia, causing its “Hats” faction to lose power to the “Caps.” A king of this country signed the Treaty of Varala and was shot during a masquerade ball by Jacob Anckarstrom. This country has been led by the houses of Bernadotte and Vasa, and its current king is Carl XVI Gustaf. For 10 points, name this Scandinavian country, home to Malmo and Stockholm.

ANSWER: **Sweden**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 18**  **Directed Round** |

1A. What character from George Orwell’s *Animal Farm* is a horse who drives carts and has the personal motto “I will work harder”?

ANSWER: **Boxer**

1B. InMarch 2014, what longtime head of the Westboro Baptist Church died months afterbeing excommunicated?

ANSWER: Fred **Phelps**[Fred Waldron **Phelps**, Sr.]

2A. What alveolate organisms includes the genera *Stentor* and *Paramecium*, contain micro- and macro-nuclei, and are named for their small hairlike growths used for locomotion?

ANSWER: **ciliate**s [or ***Cliophora***; do not accept "cilia"]

2B. What Ralph Waldo Emerson poem coined the phrase “shot heard round the world” in describing the beginning of the Revolutionary War?

ANSWER: “**Concord Hymn**”

3A. This is a 20-second calculation question. In rectangle ABCD, point E is the midpoint of edge BC. Triangle AED is drawn and shaded. What is the ratio of the shaded area to the unshaded area inside rectangle ABCD?

ANSWER: **1** [or **1 to 1**]

3B. This is a 20-second calculation question. What is the tangent of 27 pi?

ANSWER: **0**

4A. The German prepositions meaning "to," "of," and "with" take an object in what grammatical case?

ANSWER: **dative**

4B. What "default" position of no relationship between two measured phenomena is typically denoted H-nought?

ANSWER: **null hypothesis**

5A. In 2014, the Rosetta probe rendezvoused (rahn-DAY-vood), and entered into the orbit of, what kind of celestial object, the first spacecraft to do so?

ANSWER: **comet**s

5B. Name the Lady Gaga song which titles her 2011 album and begins with the lines “My mama told me when I was young, we are all born superstars.”

ANSWER: “**Born This Way**”

6A. What Broadway and dance choreographer worked with Stephen Sondheim and Leonard Bernstein on *West Side Story?*

ANSWER: Jerome **Robbins**

6B. What region, found north of Tierra del Fuego and east of the southern Andes, was named after Magellan’s belief that its inhabitants were giants?

ANSWER: **Patagonia**

7A. Name the neighbourhood of Los Angeles in which riots took place after the arrest of Marquette Frye in August 1965.

ANSWER: **Watts**

7B. What now-destroyed structure had a militarized gap at “Checkpoint Charlie” after Walter Ulbricht ordered that it be built in 1961?

ANSWER: **Berlin Wall** [or **Anti-Fascist Protection Rampart**; or **Antifaschistischer Schutzwall**]

8A. This is a 30-second calculation question. If IQ is normally distributed with a mean of 100 and a standard deviation of 15, then to the nearest percent, what is the probability that a randomly selected individual has an IQ *lower* than 85?

ANSWER: **16**% [or **0.16**; or **4/25**]

8B. This is a 30-second calculation question. Find all solutions to the equation 3 *x* squared plus 7*x* minus 6 equals 2 *x* squared minus 7 *x* plus 7.

ANSWER: *x* = **-13** and *x* = **-1**

9A. What German author of *Billiards at Half-Past Nine* wrote about the invasive journalist Werner investigating the title maid’s life in *The Lost Honor of Katharina Blum*?

ANSWER: Heinrich **Boll**

9B. In poetry, what metrical foot consists of a stressed syllable followed by an unstressed syllable?

ANSWER: **trochee**

10A. Since 1992, Hassan Nasrallah (NAHZ-ruh-lah) has been the acknowledged leader of what powerful Shia political and military organization which controls southern Lebanon?

ANSWER: **Hezbollah**

10B. What unfortunate hunter was killed by his own dogs after being turned into a stag by Artemis?

ANSWER: **Actaeon**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 18**  **Third Period, Fifteen Tossups** |

1. This poet wrote, “Tell me not, in mournful numbers, Life is but an empty dream!” in his “A Psalm of Life.” A narrative poem by this man is set during the expulsion of the Acadians and is titled for a woman loved by Gabriel Lajeunesse. This author of *Evangeline* wrote about a denizen of Gitche Gumee who marries Minnehaha in another poem. For 10 points, name this New England poet of *The Song of Hiawatha.*

ANSWER: Henry Wadsworth **Longfellow**

2. Millard Fillmore served as the first president of a university in this city. One mayor of this city was campaigned against with the slogan "Ma, Ma, Where's My Pa?" That man was accused of fathering a child with the widow Maria Halpin. At a World's Fair in this city, Leon Czolgosz assassinated William McKinley. For 10 points, name this city that is the Western terminus of the Erie Canal.

ANSWER: **Buffalo**

3. This network aired the talkshow *Lopez Tonight.* This network shows a twenty-four-hour marathon of *A Christmas Story* every December. Prior to a 2013 deal with the Oprah network, this channel was the home to all of Tyler Perry’s television programs. It picked up *Cougar Town* after ABCs' cancellation, and, in October 2014, this network will become the new home of *American Dad.* For 10 points, name this television network, which broadcasts *Conan,* as well as frequent reruns of *The Big Bang Theory.*

ANSWER: **TBS**

4. Ceramic oxides containing yttrium, barium, and copper can demonstrate this phenomenon. This phenomenon is created by bound Cooper pairs of electrons in BCS theory. Below this phenomenon's critical temperature, materials will completely expel a magnetic field in the Meissner effect. At very cold temperatures, materials demonstrating this phenomenon could carry electric current forever. For 10 points, name this phenomenon in which materials have no electrical resistance.

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

5. This action is being performed in a 1950 photo by Robert Doisneau set at Paris’ ""Hotel de Ville."" This action was photographed by Alfred Eisenstaedt for *Life* magazine on August 14, 1945. That photo showed two people performing this action and was taken to celebrate the end of the Pacific theater of World War II. For 10 points, identify this action performed by a sailor and a young woman in the photograph *V-J Day in Times Square.*

ANSWER **kiss**ing [or **smooching**]

6. In this country, extremely harsh winters causing the death of much livestock are termed zuds. This country’s border with the Tuva Republic is the location of the endorheic Uvs Lake. It is the least densely populated country on Earth. Much of the southern part of this country is covered by the Gobi Desert. For 10 points, name this landlocked country with capital at Ulaanbaatar, sandwiched between China and Russia.

ANSWER: **Mongolia** [or **Mongol uls**]

7. At this novel's end, Napoleon Letitsi teaches the villagers of Ndotsheni new ways to plow a field. A character in this novel receives a letter from Msimangu about his sister Gertrude. A major plot arc in this novel centers on the trial of a character accused of murdering Arthur Jarvis. At this novel's end, Absalom is sentenced to death and Stephen Kumalo returns to his village. For 10 points, name this novel by South African author Alan Paton.

ANSWER: ***Cry, the Beloved Country***

8. This artist created a painting from a palette consisting of eleven colors mixed with white, unmixed, and mixed with black. A boy with a red cap in the water clasps his hands in front of his mouth, and a pile of clothes lay discarded on a lawn, in this artist's painting *Bathers at Asnieres*. In another waterside painting by this artist, a woman leads a monkey on a leash. For 10 points, name this pointillist artist of *Sunday Afternoon on the Island of La Grande Jatte*.

ANSWER: Georges-Pierre **Seurat**

9. In 1998, this man’s government signed the Wye Agreement. This man’s government is part of a coalition that includes the Hatunah Party. In July 2014, this man’s government launched Operation Protective Edge, which was ended with an Egyptian-proposed ceasefire in August 2014. That ceasefire ended another round of fighting between this man’s home country, and Hamas. For 10 points, name this member of the Likud Party and Prime Minister of Israel.

ANSWER: Benjamin **Netanyahu** [or Binyamin **Netanyahu**; prompt on **Bibi**]

10. The activity of one of these molecules is affected by sarin gas and botulinum toxin. These molecules are divided into excitatory and inhibitory; the latter classification includes a molecule that counteracts the effects of glutamate in the central nervous system. Vesicles release them into the synaptic cleft when an action potential reaches them. For 10 points, name these molecules which include GABA and acetylcholine, chemical messengers that cross synapses.

ANSWER: **neurotransmitter**s [or **neuropeptide**s]

11. In 1911, this man travelled to Jerusalem and did not return to St. Petersburg until the death of P.A. Stolypin. This man was allegedly a member of the Khlysty order. This man first gained influence when he treated the hemophilia of Alexei Romanov. The noblemen who murdered this man had to poison, shoot, and drown him before he perished. For 10 points, name this Russian mystic who was influential in the court of Nicolas II and was brutally murdered in 1916.

ANSWER: Grigory Yefimovich **Rasputin** [or Grigory Yefimovich **Novykh**]

12. This element's hydride readily dimerizes into an eight-atom molecule that forms banana bonds. Laboratory glassware is frequently made out of this element's silicate. Trihalides of this element will be Lewis acids because this element is most stable with only six valence electrons. It's the first element in the p block on the Periodic Table. 10 points, name this lightest metalloid which has atomic number 5.

ANSWER: **boron** [or **B**]

13. This poem refers to the “eternal note of sadness” heard by Sophocles on the Aegean. The speaker of this poem exclaims, “Ah, love, let us be true to one another!” after hearing the “melancholy, long, withdrawing roar” of the “Sea of Faith.” This poem concludes by describing a “darkling plain…where ignorant armies clash by night.” For 10 points, name this poem about a seaside location written by Matthew Arnold.

ANSWER: “**Dover Beach**”

14. Marius Gratidianus was credited with introducing a procedure to test these items, but likely just drafted a law concerning one of them that formed the basis for other examples like the sestertius and quincunx. The bronze “as” was one of these items. Diocletian's reforms replaced debased examples of this items that had lost their silver content. For 10 points, name these items that included the famous denarius and could be exchanged for goods or services in ancient Rome.

ANSWER: **coins** [prompt on more general answers involving **currency**]

15. In this book, the angel Gabriel gives the Prophecy of Seventy Weeks to the title character. This book contains a scene in which Shadrach, Meshach and Abednego are thrown into a fire. The central character of this book earns a high position under King Darius and reads mysterious writing on the wall during Belshazzar’s feast. For 10 points, name this biblical book whose title character survives being thrown into the lion’s den.

ANSWER: Book of **Daniel**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 18**  **Tiebreaker/replacement questions** |

1. An influential theorist about these places lived in a cave at Subiaco before founding one of these places at Monte Cassino. These places were subject to the Cluniac reforms, which extended the Benedictine rule for life within them. People in these places created illuminated manuscripts and were sometimes targeted by looters since they accumulated decorative objects. For 10 points, name these places where religious devotees lived in medieval Europe.

ANSWER: **monasteries** [or **abbeys**; or **nunneries**]

2. This writer used the fictional country of Castalia for the setting of a novel in which Joseph Knecht earns the title of Magister Ludi for engaging in the title activity. This author of *The Glass Bead Game* wrote a novel whose title character befriends Govinda and serves the boatman Kamaswami while searching for enlightenment. For 10 points, name this German author who described a brahmin’s life in *Siddhartha*.

ANSWER: Hermann **Hesse**

3. This non-European city encloses English Bay, which is on the western coast of Stanley Park. Its suburb of Richmond has almost 50% Chinese people. The district of Gastown grew into this city, which is north of the Fraser River. This city is the namesake of an island separated from Washington by the Juan de Fuca Strait, which is home to the capital city of Victoria. For 10 points, name this most populous city of British Columbia.

ANSWER: **Vancouver**, British Columbia

4. Collision theory predicts that this quantity is proportional to collision frequency and a steric factor. This quantity is governed by the exponential of negative one over temperature according to the Arrhenius equation, which predicts that it doubles if temperature goes up 10 degrees. This quantity can be increased by lowering the activation energy, which is how catalysts work. For 10 points, name this quantity, the speed at which reactants are converted to products.

ANSWER: reaction **rate** [or reaction **rate** constant; or **k**]

5. This was the first complete opera broadcast on radio by Metropolitan Opera. In a scene from this opera, a boy pulls out a bone when he is asked to present his finger. The title characters of this opera are sent into the Ilsenstein forest to forage for strawberries. In the final scene of this opera, the evil witch is pulled out of the oven. For 10 points, name this opera by Engelbert Humperdinck, based on a fairy tale by the Brothers Grimm about two children who discover a gingerbread house.

ANSWER: ***Hansel and Gretel*** [or ***Hansel und Gretel***]

What underground features store groundwater inside permeable rock?

ANSWER: **aquifer**s

Give, in standard form, the equation of the line that has slope -3 and passes through the point (2,1).

ANSWER: **3*x* + *y* = 7**