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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 26**  **First Period, Fifteen Tossups** |

1. A mosque under construction in this country is controversially funded by DITIB, which claims to represent the large Turkish minority that came to this county in its Guest Worker program. Since 2012, the European Parliament has been led by a citizen of this country, which will adopt its first minimum wage in 2015. This country arrested an employee of its BND after learnign that the NSA tapped the cell phone of its Chancello. For 10 points, name this country led by Chancellor Angela Merkel.  
ANSWER: **Germany**

2. Along with a southern neighbor, this island once formed the bulk of the Sahul landmass. This island's Sundirman range is home to the Grasberg gold mine, the world's largest, and a mountain known as Carstensz Pyramid or Puncak Jaya. In WWII, its natives dubbed “fuzzy wuzzies” helped troops down the Kokoda Track to reach the Pacific at Port Moresby. For 10 points, name this second-largest island in the world that is divided between Indonesia and a namesake country once known as “Papua.”  
ANSWER: **New Guinea** [do not accept “Papua New Guinea”]

3. A piece by this composer evokes the 14th century chronicles by Jean Froissart. One of this composer’s pieces, inspired by World War I and his home, Brinkwells, was revived by Jacqueline du Pré. Another piece by this composer of a Cello Concerto in E minor is an oratorio set to text by Cardinal Newman, and is titled *The Dream of Gerontius.* He also wrote a march played at many graduations. For 10 points, name this English composer of the *Enigma Variations* and *Pomp and Circumstance.*  
ANSWER: Edward **Elgar**

4. A group of these organisms that exhibit fungal-like growth can be detected using the Ziehl-Neelsen or acid-fast stain. These organisms are exposed to crystal violet and then dyed with safranin or fuchsine to determine if their cell walls contain high amounts of peptidoglycan in the Gram stain. These organisms include spirochetes, coccus, and bacillus, which has a rod shape. These prokaryotes form a major domain, like Eukaryota and Archaea. For 10 points, name this domain whose infections are often treated with antibiotics.  
ANSWER: **Bacteria**

5. In this country, Gerardo Machado was overthrown in the “Revolt of the Sergeants.” After a failed assault on the Moncada barracks, a leader of this country gave the “History Will Absolve Me” speech. Concentration camps in this country were run by General Valeriano Weyler, who was nicknamed “the Butcher.” A war in this country started after the USS Maine exploded in the harbor of its capital. For 10 points, name this island nation that was ruled by Fidel Castro.  
ANSWER: **Cuba** [Republic of **Cuba**]

6. This constellation is home to the Trapezium Cluster and the emission nebula known as Barnard's Loop. This constellation's gamma star is Bellatrix. The stars in this constellation can be used to Procyon, Castor & Pollux, Aldebarar and Sirius. It is best known for its asterism containing the stars Alnitak, Alnilam, and Mintaka, and its two brightest stars are Rigel and Betelgeuse. For 10 points, identify this constellation named for a mythical hunter, which has a namesake "belt".  
ANSWER: **Orion**

7. In this story, the protagonist claims that he “could have killed Gregory Fitzhurst at three hundred feet with [his] left hand.” This story opens with the Commander asking Lieutenant Berg to “Rev her up to 8,500” after declaring, “We’re going through!” Its title character is at different points a pilot fighting the Germans and a doctor performing a surgery. For 10 points, name this short story by James Thurber about a man who imagines himself in various lives.  
ANSWER: “The **Secret Life of Walter Mitty**”

8. Joseph Minard popularized infographics with a chart showing the progress of this campaign, which saw Marshal Barclay de Tolly dismissed after losing Smolensk. The Bagration Fleches made a lengthy stand in this campaign's major battle, a loss for Mikhail Kutuzov that led to the burning of the capital but not the surrender of Alexander I. French troops were almost entirely wiped out by fighting at Borodino and the harsh winter during, for 10 points, what 1812 invasion by Napoleon?  
ANSWER: Napoleon's 1812 **invasion of Russia**

9. In the binary representation two's complement, this number is denoted by all ones. The product of the basis elements of the quaternions is this number. e to the power of i times pi equals this number. The complex conjugate of an imaginary number is equal to this quantity times the original number. Raising a number to this power is equivalent to taking its reciprocal. This number is equal to i-squared. For 10 points, identify this number, whose square is one.  
ANSWER: **negative one**

10. During this holiday, celebrants light kinara candles and pledge to uphold seven core principles, such as “Umoja,” which means unity, and “Ujamaa,” which means cooperative economics. This holiday, which is celebrated from December 26 to January 1, was created in the 1960’s by political activist Maulana Karenga, who claimed its name was inspired by a Swahili phrase. For 10 points, name this week-long holiday, a celebration of African culture in the United States.  
ANSWER: **Kwanzaa**

11. A flat bird sits on a desk in the background of this painting, and a ghostly figure peers through a window holding a candle. To the right of a woman holding a child in this painting is a soldier lying on his back clutching a broken sword from which a flower grows. Above that soldier in this painting is a horse with a rhombus-shaped wound on its side. For 10 points, name this grayscale painting by Picasso which depicts the aftermath of the bombing of the title Basque city.  
ANSWER: ***Guernica***

12. This deity uses a fishing rod to reel in Jormungandr, a monstrous serpent fated to slay this deity at Ragnarok. This god’s wife is the golden-haired Sif. This deity dresses in women’s clothes and crashes the giant Thrym’s wedding in order to retrieve his weapon Mjollnir. For 10 points, name this hammer-wielding Norse god of thunder.  
ANSWER: **Thor**

13. A citizen of this country was shown shirtless and covered in bees in a photo project by Richard Avedon. Its rural inhabitants were photographed in *Let Us Now Praise Famous Men* by Walker Evans and James Agee, a writer from this country. Camps like Manzanar in this country were photographed by Ansel Adams, who documented its World War II internment of ethnic Japanese. For 10 points, name this country where George Eastman founded Kodak in New York.  
ANSWER: The **U**nited **S**tates of America [or **America**]

14. Nutrient pollution causes the overconsumption of this element by benthic critters decomposing dead algal blooms, leading to a dead zone in the Gulf of Mexico every spring. Quartz and other silicate rocks contain silicon and this element, which is the most abundant, by weight, in the Earth's crust. A "great event" involving it occurred due to the rise of cyanobacteria. For 10 points, name this element that forms the second-most-common gas in the atmosphere.  
ANSWER: **oxygen** [or **O**]

15. Thomas Wyatt introduced this poetic form into the English language. Edmund Spenser wrote a series of these concluding with an “Epithalamion” tracing his courtship of Elizabeth Boyle entitled *Amoretti.* Many poems of this type about an idealized woman named Laura were written by Petrarch, who names this form’s Italian type. For 10 points, name this type of strictly rhymed, fourteen-line poem.  
ANSWER: **sonnet**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 26**  **Directed Round** |

1A. What metal's plus-two oxidation state often causes compounds containing it to appear blue, such as when bonded to sulfate?  
ANSWER: **copper** [or **Cu**]

1B. What structure, partially or completely absent in Aicardi Syndrome, is a bridge of neural fibers connecting the left and right hemispheres of the brain?  
ANSWER: **corpus callosum**

2A. What quantity is non-zero if a quadratic polynomial has two roots, and is equal to b-squared minus 4 a c?  
ANSWER: **discriminant**

2B. The English words "schmooze," "kvetch," and "shmendrik" are borrowed from which other West Germanic language?  
ANSWER: **Yiddish**

3A. This is a 20-second calculation question. What is the median of the following set of numbers: 80, 78, 72, 54, 86, 95?  
ANSWER: **79**

3B. This is a 20-second calculation question. What is the cosecant of a second-quadrant angle whose cosine is negative 2/5?  
ANSWER: **5 over** the square **root** of **21** [or **5 over rad**ical **21**; or **5 times** the square **root** of **21**, all **over 21**; or **5 times rad**ical **21**, all **over 21**]

4A. What English novelist wrote the didactic epistolary novels *Pamela* and *Clarissa*?  
ANSWER: Samuel **Richardson**

4B. Name the Los Angeles Galaxy midfielder who was controversially not selected for the US World Cup team in 2014.  
ANSWER: Landon **Donovan** [Landon Timothy **Donovan**]

5A. What running mate of George McClellan lent his name to an 1883 Civil Service Reform Act passed after the assassination of James Garfield?  
ANSWER: George **Pendleton**

5B. Name the Governor of Texas and 2012 presidential candidate for the Republican Party, who was indicted by a grand jury in August 2014 on an abuse of power charge.  
ANSWER: Rick **Perry** [James Richard **Perry**]

6A. What figure of speech is exemplified by calling a senior citizen "a million years old"?  
ANSWER: **hyperbole**

6B. What John Steinbeck novel centers on the ranch workers George and Lennie?  
ANSWER: ***Of Mice and Men***

7A. The Spanish name “Islas Malvinas” is given to what archipelago, a British overseas territory with capital at Stanley?  
ANSWER: **Falkland** Islands [or **Falklands**]

7B. What imperial advisor, who traditionally wears a three-cornered hat, has his schemes against Persia’s Jews foiled by Esther, as celebrated on Purim?  
ANSWER: **Haman** the Agagite

8A. This is a 30-second calculation question. How many cubical boxes of volume 8 cubic centimeters can fit inside a larger cubical box that has surface area 384 square centimeters?  
ANSWER: **64** boxes

8B. This is a 30-second calculation question. Give all solutions - real or complex - to the equation *x* squared plus 4 *x* equals negative 29.  
ANSWER: **-2 plus or minus 5 *i*** [or **-2 plus 5 *i* and -2 minus 5 *i***]

9A. Jean-Luc Godard’s *Breathless* pioneered what technique in which the camera angle of a single shot is abruptly changed to signify the passage of time?  
ANSWER: **jump cut**

9B. What prolific 16th century Spanish playwright wrote the plays *The Dog in the Manger* and *Fuente Ovejuna*?  
ANSWER: Lope de **Vega**

10A. What two duchies were at the center of the Gastein Convention and numerous other disagreements between Denmark and the German Confederation in the mid-1800s?  
ANSWER: **Schleswig and Holstein** [or **Sonderjylland and Holsten**]

10B. What term for "divine wind" refers to both the hurricanes that expelled the Mongol invasion fleet from Japan in 1281 and a tactic used by Japanese pilots in World War II?  
ANSWER: **kamikaze**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 26**  **Third Period, Fifteen Tossups** |

1. This city’s Philharmonic Orchestra is famous for its annual New Year’s Day Concerts. The world’s oldest zoo can be found on the grounds of Schönbrunn Palace in this city. This city’s cuisine is characterized by dishes such as apple strudel and Wiener Schnitzel. It forms a metropolitan area with nearby Bratislava, which lies across the Danube from this city. For 10 points, identify this capital of Austria.  
ANSWER: **Vienna**, Austria

2. One of these events held at Ecry by Theobald III of Champagne led to the Fourth Crusade. Henry II of France died during one of these events. These events often occurred alongside behourds and melees. These events were held yearly at the theatrical Accession Day Tilts. For 10 points, name these medieval events at which knights tried to unhorse each other using lances.  
ANSWER: **joust**s [or jousting **tournament**s]

3. Modern measurements of this constant depend on X-ray crystallography of silicon. Faraday's constant equals the elementary charge divided by this number, and analogously, Boltzmann's constant equals the gas constant divided by this number. This quantity is the ratio between 12 atomic mass units and a gram of carbon-12. For 10 points, name this number of objects in a mole, often approximated as 6.02 times 10 to the 23rd power.  
ANSWER: **Avogadro**'s number [or **Na**]

4. Tennis champion Edwin Fischer was discovered to be schizophrenic after accidentally predicting a 1920 attack in this city by Italian anarchists using a carriage bomb. The Buttonwood Agreement and Tontine Coffee House provided the foundation for a major financial institution in this city, which was buoyed by the Rockefellers for years before Black Tuesday. For 10 points, name this city that saw a 1929 crash hit its Stock Exchange on Wall Street.  
ANSWER: **New York** City

5. In one of this author’s novels, the title accommodations at the Pension Bertolini in Florence are denied to Charlotte Bartlett and Lucy Honeychurch. This author of *A Room with a View* also wrote a novel in which Adela Quested accuses Dr. Aziz of attempted rape after a visit to the Marabar Caves in the title country. For 10 points, name this British novelist of *A Passage to India.*  
ANSWER: E. M. **Forster** [or Edward Morgan **Forster**]

6. The Pledge of the Tree was taken outside this city right before it signed the Treaty of Hudaybiyyah. The tawaf ritual consists of walking seven circles in this city. Certain individuals wishing to enter this city must be in the purified state of ihram. A group fled this city, home to the sacred well of Zamzam, during the Hegira. This site of the Kaaba is considered the only location more sacred than Yathrib, or Medina. For 10 points, name this home of Muhammad and holiest city in Islam.  
ANSWER: **Mecca** [or **Makkah**]

7. A song on this album includes the lyrics “I got that off-black Cadillac, midnight drive,” and is called “White Walls.” In the music video for a song on this album its artist dresses in wolf furs before asking “can we go back?” and stating that “this is the moment.” In another song on this album, the singer says that he wears “your granddad’s clothes” and that he looks “incredible.” For 10 points, name this album by Macklemore that includes “Can’t Hold Us” and “Thrift Shop.”  
ANSWER: *The* ***Heist***

8. Standard anthropological explanations for this practice focus on high-violence societies where men tend to die off at disproportionate rates. About a third of humans worldwide live in societies where this practice is legal. A 1954 law in India made this practice illegal for four specific religions while leaving an exception for Muslims, who generally allow this practice within defined limits. For 10 points, identify this practice of a man taking multiple wives.  
ANSWER: **polygamy** [or **polygyny**; or **plural marriage** or other descriptive answers until the end of the question]

9. This author wrote about Eckels’s trip to kill a Tyrannosaurus rex, during which he accidentally kills a butterfly, in “A Sound of Thunder.” Douglas Spaulding drinks the title beverage in his novel *Dandelion Wine.* In a novel by this man, Captain Beatty oversees Guy Montag, whose job as a fireman requires him to burn books. For 10 points, name this science fiction author of *Fahrenheit 451.*  
ANSWER: Ray **Bradbury** [or Ray Douglas **Bradbury**]

10. Operation Bodyguard was an attempt by the Allies to mislead Germany about this event, and Hitler’s Directive Number 51 attempted to prepare for it. Paratroopers from the 101st Airborne dropped onto Utah Beach during this event. American troops took heavy fire while attempting to land at Omaha Beach during this event. For 10 points, name this massive Allied landing which occurred on June 6, 1944, beginning the campaign to liberate France from the Nazis.  
ANSWER: **D-Day** [or **Operation Neptune**; or **June 6, 1944** until it is read; prompt on **Normandy landings**; prompt on **Operation Overlord**]

11. This team lives in a mansion serviced by the butler Edwin Jarvis. This team's "west coast" branch was led by Clint Barton, who used a bow and arrow. In a film appearance, members of this team worked alongside SHIELD agent Phil Coulson before his apparent death. This team was first formed after Loki tricked the Hulk into going mad. For 10 points, name this superhero team from Marvel Comics whose members usually include Thor, Iron Man, and Captain America.  
ANSWER: The Mighty **Avengers**

12. A character in this play confesses to drowning her child after having an affair. This play begins with an eyelid-lacking valet locking the three central figures in a Second Empire-styled room. In a fit of rage, Estelle attempts to stab Ines with a paper knife, but she is unsuccessful. After a locked door in this play mysteriously opens, Garcin concludes "Hell is other people." For 10 points, name this play about three condemned people, written by Jean-Paul Sartre.  
ANSWER: ***No Exit*** [or ***Huis Clos***]

13. The Red Queen hypothesis uses the relationship between sexual reproduction and parasitism as an example of this phenomenon. The rough-skinned newt's extreme levels of tetrodotoxin are the result of this process. The asymmetrical type of this phenomenon involves opposing selective pressures, as seen between bats and moths. For 10 points, what term describes the escalating adaptations and counter-adaptations that is often seen in predator-prey relationships, in which species evolve together?  
ANSWER: antagonistic **coevolution** [or evolutionary **arms race**; prompt on **evolution**]

14. Exekias's Vatican Amphora depicts this man winning a board game against Ajax. While staying at the court of Lycomedes, he was tricked by Odysseus into choosing armor over clothes, ruining his disguise as a woman. This man inherited Balius and Xanthus, magical horses given at the wedding of his parents, Peleus and Thetis. This leader of the Myrmidons took revenge for the death of Patroclus by killing Hector. For 10 points, name this Greek hero of the Trojan War who was invulnerable everywhere except his namesake heel.  
ANSWER: **Achilles**

15. The time-independence of the Hamiltonian implies this principle according to Noether's theorem. This principle is described by a law that sets "dU" equal to "dQ" plus "dW". This principle, which is equivalent to the first law of thermodynamics, explains why for a falling ball one-half m v-squared equals m g h. For 10 points, identify this statement that a certain quantity can be converted between potential, chemical, and kinetic types, but not destroyed.  
ANSWER: law of **conservation of energy**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 26**  **Tiebreaker/replacement questions** |

1. A character in this novel has his broken leg set with cement after a river overturns his family’s cart. This novel traces a journey to the town of Jefferson. Its chapters are mostly narrated by various members of the central family, including the brothers Cash, Vardaman, and Darl. For 10 points, name this novel about the Bundren family’s journey to bury their matriarch Addie, which was written by William Faulkner.  
ANSWER: ***As I Lay Dying***

2. Almost all of the world’s balsa wood comes from this country, home to the Guayas River. This country is home to the tall volcano Cotopaxi and the mountain whose summit is the furthest point on earth’s surface from the center, Chimborazo. Its cities include Guayaquil and the highest capital city in the world, Quito. For 10 points, name this South American country named for its position along the line that divides the Northern and Southern hemispheres.  
ANSWER: **Ecuador** [Republic of **Ecuador**; or Republica del **Ecuador**]

3. Outside the boundary layer, a thin plate induces this phenomenon in fluids. In a pipe, this phenomenon occurs when the Reynolds number is more than about 2300. Fluid motion in the wake of a moving object, like a boat, is characterized by this phenomenon. It leads to unpredictable eddies and vortices, unlike in laminar flow. For 10 points, name this phenomenon which causes discomfort for many airplane passengers.  
ANSWER: **turbulence** [or **turbulent** flow]

4. The father of this country's modernization movement was the Renaissance man Fan Noli. This country is plagued by blood feuds under the code of Gjakmarrja (gok-MAR-juh), and it was once ruled by the eccentric King Zog. This European country was occupied by Italy during World War II and fell under the Communist dictatorship of Enver Hoxha (HO-juh) afterwards. For 10 points, name this country that is north of Greece on the Adriatic coast.  
ANSWER: **Albania**

5. The bottom right corner of this painting depicts a dog barking at a drummer. In this painting's background, a man dressed in gold waves a yellow and blue flag, and a man in red loading a musket stands in front of a girl with a chicken on her waist. In this painting, Willem van Ruytenburch speaks to Franz Banning Cocq, who wears a red sash with his left hand outstretched. For 10 points, name this Rembrandt painting depicting a Dutch militia.  
ANSWER: *The* ***Night Watch*** [or *De* ***Nachtwacht***; or *The* ***Shooting Company of Frans Banning Cocq***]

What book by Henry David Thoreau details his time spent in isolation at the title pond?  
ANSWER: ***Walden***

If a cubical box with faces of area 16 square feet each is filled with 8 cubic feet of water per minute, how many seconds will it take to completely fill?  
ANSWER: **480** seconds