**VHSL Regular Season 2016-2017 - Round 09 - First Period, Fifteen Tossups**

1. After taking a series of tests, a character in this film shoots a cardboard cutout of a little girl carrying a quantum physics textbook. That character in this film is given a tiny gun with enormous recoil called the Noisy Cricket. The villain of this film is a giant bug that disguises itself by wearing a farmer's skin. For 10 points, name this comedy starring Will Smith and Tommy Lee Jones as members of the title organization dealing with aliens.
ANSWER: ***Men in Black***

2. A character created by this author acquires the title "Tuan" on Patusan (PAT-yoo-sahn) after disgracing himself by abandoning the *Patna.* In a novella by this author, heads on stakes surround the encampment of a mysterious ivory trader in the Congo. In that novella by this man, Marlow goes in search of Kurtz, whose last words are "The horror! The horror!" For 10 points, name this Polish-British novelist of *Lord Jim* and *Heart of Darkness.*
ANSWER: Joseph **Conrad**

3. In this novel, Robert is poked with spears by his companions in a reenactment of their earlier hunt. Characters in this novel include a pair of twins referred to by their combined name, "Samneric" (Sam and Eric). The conch is destroyed and Piggy is murdered at the climax of this novel about a group of boys stranded on an island after a plane crash. For 10 points, name this novel by William Golding.
ANSWER: ***Lord of the Flies***

4. During this project, participants built and stayed in Fort Mandan. While undertaking it, its leaders befriended a trapper named Toussaint (TOO-sahn) Charbonneau (SHAR-bon-NO) and built another fort on the Columbia River. The leaders of this project were helped by a Shoshone (SHOW-show-nee) woman named Sacagawea (SOCK-a-JUH-wee-UH). For 10 points, what project led by two explorers mapped the land acquired in the Louisiana Purchase?
ANSWER: **Lewis and Clark** Expedition [or **Corps of Discovery** Expedition]

5. This scientist's last treatise, *The Two New Sciences*, helped formalize materials science as a discipline. To honor his patron, this scientist used the term "Medicean (MEE-dee-CHEE-inn) stars" to refer to the satellites Io, Europa, Callisto, and Ganymede—the moons of Jupiter now named for him. He was the first to develop a refracting telescope for observing outer space. For 10 points, what Italian astronomer was forced to recant his heliocentric views by the Inquisition?
ANSWER: **Galileo** Galilei [or Galileo **Galilei**]

6. These cells undergo the acrosome reaction when they penetrate the zona pellucida (puh-LOO-sid-uh). They mature in the epididymis (ep-uh-DID-uh-mis) after developing in the seminiferous (sem-uh-NIF-uh-rus) tubules. These cells use their flagellum to swim toward an oocyte (OH-oh-site) after ejaculation. For 10 points, name these male sex cells that fertilize eggs.
ANSWER: **sperm** [prompt on gamete; prompt on sex cell before it is read]

7. This composer wrote two suites for military band, one in F major and the other in E-flat. Another of his pieces begins with strings using the wooden part of their bows to play a march rhythm in 5/4 ("five four") time. The hymn "I Vow to Thee, My Country" originates from the "Bringer of Jollity" movement of a suite by this composer titled for bodies such as Mars and Jupiter. For 10 points, name this composer of *The Planets*.
ANSWER: Gustav **Holst** [or Gustav Theodore **Holst**]

8. God took away this man's father's ability to speak until his birth. The Gospel of Matthew describes this man's diet as consisting of locusts and honey. According to one account, this man's beheading was requested by a daughter of Herodias named Salome. (SAL-loh-may) This son of Zechariah and Elizabeth performed a certain ritual in the Jordan River. For 10 points, name this prophet who preached of the coming of his messianic cousin, Jesus of Nazareth.
ANSWER: **John the Baptist** [or **John the Baptizer**; prompt on John]

9. In a play about these two characters, one of them flips a coin with the same result 92 times in a row. In another play, these two characters are told, "When the wind is southerly, I know a hawk from a handsaw." These two characters "Are Dead" according to the title of a play by Tom Stoppard. For 10 points, name these two inept characters told by Gertrude and Claudius to spy on Hamlet.
ANSWER: **Rosencrantz** and **Guildenstern** [or **Guildenstern** and **Rosencrantz**]

10. The zeroth law of thermodynamics states that when two systems with the same value for this variable are in equilibrium with a third system, the third system also has the same value for it. A relation involving this variable, pressure, and volume is an equation of state. By Charles's law, this quantity is directly proportional to volume. All motion ceases at the minimum value for this quantity, which is absolute zero. For 10 points, what quantity is measured in Celsius?
ANSWER: **temperature** [or **T**]

11. After a victory, this ruler signed an agreement on a raft in the middle of the Neman River near Tilsit. He aroused anger after naming his brother Joseph the king of Spain. This man won the so-called "Battle of the Three Emperors," but was ultimately defeated at the massive "Battle of the Nations." He was exiled after losing to coalition forces at Leipzig. For 10 points, what Emperor ordered a disastrous 1812 invasion of Russia and took power after the French Revolution?
ANSWER: **Napoleon** I [or Napoleon **Bonaparte**]

12. This animal is what the legendary creature "zouyu" (ZOH-you), which is mentioned in ancient literature, is believed to have been. The World Wide Fund for Nature uses this animal as its logo, and a book on evolution is titled for its supposed "thumb." At the National Zoo in Washington D.C., examples of these animals include Mei Xiang (SHEE-ong) and her cub, Bao Bao. For 10 points, what animal in China eats a diet of 99 percent bamboo?
ANSWER: giant **panda** [or **panda** bear; do not accept "red panda"]

13. While in this city, Medea laced a cup of wine with deadly aconite poison, but its king knocked the goblet out of his son's hands after recognizing the hilt of his sword. This city's king killed himself after his son forgot to change the masts of his ship from black to white. Aegeus (ay-GEE-uss) was a king of this city, which is named for the Greek goddess of wisdom. For 10 points, name this large city in ancient Greece, which is its modern-day capital.
ANSWER: **Athens**

14. During this man's reign, Richard Chancellor visited his court as a representative of the Muscovy Company. He built a cathedral shaped like a flame to honor his defeat of the Kazan Khanate. This ruler killed thousands during a massacre carried out by his oprichniki (OHP-ruh-CHA-nee-kee) secret police. For 10 points, what ruler was the first tsar (ZAR) of Russia and had a nickname referring to such actions as killing his own son?
ANSWER: **Ivan the Terrible** [or **Ivan IV** Vasilyevich; prompt on Ivan]

15. This material differentiates via fractional crystallization. Volatiles in this material can become gaseous as it rises, creating enough pressure to blow out plugs. The solidification of this material forms a plutonic intrusion, such as rhyolite. When a chamber containing this material is rapidly evacuated, a caldera may form. This material flows to the surface in vertical channels called pipes. For 10 points, what molten material exists below the Earth's surface, as opposed to lava?
ANSWER: **magma** [do not accept or prompt on "lava"]

 **VHSL Regular Season 2016-2017 - Round 09 - Directed Period**

1A. What is the term for the underside of an organism, contrasted with dorsal?
ANSWER: **ventral**

1B. In 2015, Dylann Roof killed nine people at an AME church in what Southern city?
ANSWER: **Charleston**

2A. What American novelist wrote *The Naked and the Dead* and *The Executioner's Song*?
ANSWER: Norman **Mailer**

2B. A spinning ice skater spins faster when pulling their arms and legs in closer to their body due to the conservation of what rotational quantity?
ANSWER: **angular momentum** [prompt on rotational momentum; do not accept "linear momentum"]

3A. This is a 20-second calculation question. Lloyd has not yet decided on his transportation to work. If there is a 20% chance he will walk, a 30% chance he will jog, a 40% chance he will ride a bicycle, and a 10% chance he will drive a car, what is the percent chance that he will either drive a car or ride a bicycle?
ANSWER: **50%**

3B. This is a 20-second calculation question. Simplify the expression the cube root of the quantity one hundred twenty five x to the ninth power.
ANSWER: **five x to the third power** or **five x cubed**

4A. A trade route connecting China to the Mediterranean was named for what valuable material first traded by the Han Dynasty?
ANSWER: **silk** [or the **Silk** Road]

4B. The Magyars, an ethnic group that invaded Western Europe several times, were mostly from what modern-day country, whose first king was Saint Stephen?
ANSWER: **Hungary**

5A. Zebulon Pike and Lewis Cass both searched for the source of what American river, which was later found at Lake Itasca?
ANSWER: **Mississippi** River

5B. What rare transition metal, highly valued for its low reactivity and corrosivity, takes its name from the Spanish for "little silver"?
ANSWER: **platinum**

6A. In what novel by Anthony Burgess do Alex and his "droogs" speak Nadsat?
ANSWER: *A* ***Clockwork Orange***

6B. What policy from 1994 to 2011 allowed gay Americans to serve in the armed forces if they were not open about their sexuality?
ANSWER: **Don't Ask, Don't Tell** [or **DADT**]

7A. A hagiographer (HAY-gee-AH-graph-UR) is someone who chronicles the lives of what kind of religious figure?
ANSWER: **saint**s

7B. In what Shakespeare comedy does Rosalind journey into the Forest of Arden?
ANSWER: ***As You Like It***

8A. This is a 30-second calculation question. In degrees, what acute angle does the line y equals x times the square root of three make with the x-axis?
ANSWER: **60 degrees**

8B. This is a 30-second calculation question. Sarah wants to estimate the volume of a muffin by envisioning it as a cylinder with a hemisphere on top. If the radius of the muffin is three centimeters and the height of the cylindrical portion is four centimeters, what is the volume of the muffin?
ANSWER: **54pi centimeters-cubed** [or **54pi cubic centimeters**]

9A. Which Japanese baseball player, best known for his time with the Seattle Mariners, recently passed 3,000 career MLB hits?
ANSWER: Ichiro **Suzuki** [or **Ichiro** Suzuki]

9B. What German composer wrote operas like *Der Rosenkavalier* (dair ROH-zen-kah-vuh-LEER) in addition to tone poems including *Thus Spoke Zarathustra* (zah-ruh-THOO-struh)?
ANSWER: Richard **Strauss**

10A. What monster, whose name comes from the Greek for "little ruler," is the king of the serpents, and has a deadly gaze?
ANSWER: **basilisk**

10B. What simple machine is found in an Atwood machine?
ANSWER: **pulley**

 **VHSL Regular Season 2016-2017 - Round 09 - Third Period, Fifteen Tossups**

1. In an unfinished novel by this author, the title character's stutter prevents him from defending himself from the accusations of Claggart, whom he kills with a single punch. In a short story by this author, the title copy clerk eventually refuses to do any work at all, simply repeating, "I would prefer not to." For 10 points, name this American author of *Billy Budd* and "Bartleby the Scrivener."
ANSWER: Herman **Melville**

2. A for-profit breeding scheme and forty frozen corpses of these animals were uncovered by a 2016 investigation of a Buddhist temple in western Thailand. One of these animals killed a record 436 people before being shot by Jim Corbett in Champawat. There exists only around 2,000 of the Bengal subspecies of this animal, the national animal of both India and Bangladesh. For 10 points, name these big cats with striped fur.
ANSWER: **tiger**s

3. A section of this treaty proved impractical to implement, leading to the Dawes and Young Plans being created years later. Some of its provisions, such as Article 231's "War Guilt Clause," were attacked by John Maynard Keynes as too harsh. This treaty came about after six months of negotiations at the Paris Peace Conference, whose attendees included Woodrow Wilson. For 10 points, what June 1919 treaty between the Allied Powers and Germany ended World War One?
ANSWER: Treaty of **Versailles** (ver-SIGH)

4. A paradigm of these constructs that eliminates side effects is the functional type. Another paradigm of these constructs has methods that operate on instances of classes and is the object-oriented type. A compiler will convert text written in this kind of construct into machine language. A common first step when introducing these constructs is to demonstrate printing "Hello, World!". For 10 points, Java is an example of what type of language that is used to code?
ANSWER: **programming** language [prompt on computer language]

5. This philosopher held that the pineal gland was the origin of the soul in his book *Passions of the Soul*. This philosopher described some ideas as clear and distinct in a treatise spanning six days that began by rejecting all that cannot be known with certainity. A later book by this author of *Meditations on First Philosophy* states "cogito ergo sum." For 10 points, name this French philosopher who once wrote "I think, therefore I am."
ANSWER: Rene **Descartes** (day-CARR)

6. The revelation that this country had a spy in a rival government was revealed in the Guillaume (gee-OHM) Affair. Its First Secretary of the Central Committee was the authoritarian Erich Honecker. This country's secret police was the Stasi which enforced the will of the Socialist Unity Party. Ronald Reagan told Mikhail Gorbachev to tear down a structure here. For 10 points, what Soviet dominated country ceased to exist in 1990 when Germany was reunified?
ANSWER: **East Germany** [or the **German Democratic Republic**; or **GDR**; or **Deutsche Demokratische Republik**; or **DDR**; prompt on Germany]

7. The protagonist of this novel makes Mrs. Phelps cry by reading "Dover Beach." This novel's protagonist questions his way of life after meeting Clarisse McClellan, a teenage girl who lives next door and soon disappears. This novel follows the flamethrower-wielding "fireman" Guy Montag. For 10 points, name this dystopian novel by Ray Bradbury in which all books are burned.
ANSWER: ***Fahrenheit 451***

8. The name of this song was inspired from a line in Nas's "Ether" which describes someone who is "a fan, a phony, a fake." Its chorus is taken from Dido's (DYE-doh's) "Thank You." This song's subject has a younger brother, Matthew, who was denied an autograph after waiting outside in the cold. In its conclusion, its artist writes a letter to a man who he realizes recently drove off a bridge. For 10 points, name this Eminem song about the title crazy fan.
ANSWER: "**Stan** "

9. During his travels across Europe, this composer wrote symphonies nicknamed *Paris* and *Prague*. His two symphonies in G minor are given the contrasting nicknames "great" and "little." The magnificence of this composer's Symphony No. 41 was compared by critic Johann Peter Salomon to that of the chief Roman god, giving it the nickname *Jupiter*. For 10 points, name this Austrian child prodigy who wrote his first symphony at age eight.
ANSWER: Wolfgang Amadeus **Mozart**

10. A hunter named Marbuel (MAR-bwell) lures the title girl to Hell in this composer's opera *The Devil and Kate.* The daughter of the Water-Goblin is the title character of his opera *Rusalka* (roo-SAHL-kuh). Longfellow's *The Song of Hiawatha* inspired the Largo movement of a symphony he wrote that was also influenced by African-American spirituals. For 10 points, name this Czech composer of a ninth symphony "From the New World."
ANSWER: Antonin **Dvorak** (DVOR-zhahk)

11. This chemist coined the name for the quantum of light, the photon. This chemist's namesake theory of acids and bases considers them as electron-pair acceptors and donors, respectively. This American chemist developed the concept of shared pairs of electrons between atoms, which form covalent bonds. For 10 points, which chemist developed a diagram for showing the lone pairs and bonding in a molecule, using dots and lines.
ANSWER: Gilbert **Lewis** [or Gilbert Newton **Lewis**]

12. After events in this country, the phrase "an arm's length" trended on Twitter, reflecting a mayor's comments advising women to follow "a code of conduct." In this country, hundreds of women were sexually assaulted during 2016 New Year's celebrations, prompting debates about its asylum policy. In March 2014, its chancellor became the longest-serving head of government in the European Union. For 10 points, what European country is led by Angela Merkel?
ANSWER: Federal Republic of **Germany** [or **Deutschland**]

13. On this island, a man was beaten to death with his own wooden leg during the bloody siege of Drogheda (DRO-gay-da). The "National Invincibles" carried out the Phoenix Park Murders on this island. Charles Stewart Parnell was an advocate for Home Rule for this island, which protested its inclusion within the Acts of Union of 1800. For 10 points, many residents of what island fled to America after it was hit with a devastating 1840's potato famine?
ANSWER: **Ireland** [or **Eire**]

14. These things are supposedly the "Royal Road to the Unconscious" according to a book in which the author discusses one that afflicted him called "Irma's Injection." These things are considered as examples of "wish fulfillment" in a book by Sigmund Freud (FROYD) about their interpretation. For 10 points, name these sensory images that appear during sleep, whose malevolent types are called nightmares.
ANSWER: **dream**s

15. According to the Green-Tao theorem, types of these progressions appear in the sequence of prime numbers. The sum of a series denoted by this adjective is found by multiplying the number of terms by the mean of the first and last terms. It denotes a series that will either sum to zero or diverge, if the common difference is non-zero. For 10 points, what adjective describes sequences whose subsequent terms differ by the same amount, such as the sequence 1, 3, 5, 7, 9?
ANSWER: **arithmetic**

 **VHSL Regular Season 2016-2017 - Round 09 - Tiebreaker Questions**

1. This equation includes a factor representing the frequency of collisions between reactant molecules, called the pre-exponential factor and represented A. This equation is used in conjunction with a graph of the natural log of k versus the inverse of temperature, giving a line with a slope equal to minus activation energy over the gas constant. For 10 points, what equation describes the temperature dependence of the rate constant and is named for a Swedish chemist?
ANSWER: **Arrhenius** (ah-REE-ehn-EE-us) equation

2. This country is the main habitat of the world's largest flower, *Rafflesia arnoldii*, which smells like rotting flesh. This country surpassed Brazil's deforestation rate as a result of its world-leading palm oil production. This country owns the Moluccas, which were nicknamed the "Spice Islands," and it is the only home of the Komodo dragon. For 10 points, name this country whose 13,000 islands include Sumatra and Java.
ANSWER: **Indonesia** [or Republic of **Indonesia**; or Republik **Indonesia**]

3. This country assassinated various enemies during Operation Spring of Youth, part of a broader attack on groups like Black September. In a 1917 letter, Foreign Secretary Arthur James Balfour proposed the creation of what would eventually become this country. This country captured the Gaza Strip in the Six-Day War. Eleven of its Olympic athletes were killed in Munich in 1972. For 10 points, what country fought Arab neighbors in the Yom Kippur War?
ANSWER: State of **Israel**

4. An early bishop of this city was Linus, who also served as the second pope. A passage in an epistle written to the residents of this city attacks those who preach what they do not practice, who are dubbed hypocrites. It's not Antioch, but Saint Peter developed a church here, and its Christian residents were blamed by its leader for a fire in the 60s AD. For 10 points, name this city that encloses the Vatican.
ANSWER: **Rome** [or **Roma**]

5. At the conclusion of this essay, the author advises "do not believe it" when you think "good days are preparing for you," because "nothing can bring you peace but yourself." This essay states that "a foolish consistency is the hobgoblin of little minds" and commands, "trust thyself." For 10 points, name this essay opposing conformity that was written by Ralph Waldo Emerson.
ANSWER: "**Self-Reliance**"

What is the logarithm with base 25 of 125?
ANSWER: **3/2** [or **1.5**]

What daughter of Queen Isabella was the first wife of Henry VIII?
ANSWER: **Catherine of Aragon** [prompt on Catherine]