**VHSL Regular Season 2016-2017 - Round 16 - First Period, Fifteen Tossups**

1. This doctrine is stated explicitly in the first Smalcald Article. Opponents of this doctrine often cite a definition given in the second verse of the Epistle of James. It was called the rock upon which the rest of theology depends by its formulator, Martin Luther. For 10 points, name this doctrine that states that the belief in Jesus and God is sufficient to atone for sin, which is often contrasted with justification by works.
ANSWER: justification by **faith alone** [or salvation by **faith alone**; or **sola fide**; prompt on justification by faith]

2. This operation can be performed by finding the difference in the logarithms of two numbers and taking the antilogarithm of the result. In the case of a linear factor, one can check for the zeros of a polynomial using the synthetic type of this operation. Performing it on two polynomials yields the possibility of vertical asymptotes and creates a rational function. For 10 points, name this operation that yields a quotient and a remainder, and which is the inverse of multiplication.
ANSWER: **division**

3. In this novel, the Glorious Loyalty Oath Crusade is begun by Captain Black to get revenge on another character. Set on the island of Pianosa, this novel includes such characters as Colonel Cathcart and Milo Minderbinder. This novel is about World War II bomber pilots paradoxically trapped into flying endless risky missions. For 10 points, name this novel about Yossarian by Joseph Heller.
ANSWER: ***Catch-22***

4. This politician suffered a severed artery during the Battle of Trenton, sidelining him from combat during the Revolution. This president's Secretary of State negotiated the Adams-Onis (oh-NEEZ) Treaty with Spain, acquiring the Florida territory. This man was re-elected almost unanimously in 1820 during the "Era of Good Feelings." For 10 points, what U.S. President's namesake doctrine opposes European intervention in the Americas?
ANSWER: James **Monroe**

5. The Rye House Plot targeted a member of this royal house known as the "Merrie Monarch." The fictional Popish Plot claimed Catholics wanted to topple this house. Robert Catesby targeted another of its members with a scheme meant to blow up the House of Lords. That member of this house targeted by the Gunpowder Plot was a king of Scotland who assumed the English throne after Elizabeth I died. For 10 points, English king James I was from what royal house?
ANSWER: House of **Stuart**

6. This architect designed the Rosenbaum House located in Florence, Alabama, and had homes in Arizona and Wisconsin both named for the Welsh poet Taliesin. This architect designed a hotel in the "Maya Revival Style" which famously survived a 1923 earthquake. This designer of the Imperial Hotel also designed a Pennsylvania home for Edgar Kaufmann which hangs over a running waterfall. For 10 points, name this architect who designed Fallingwater.
ANSWER: Frank Lloyd **Wright** [or Frank Lincoln **Wright**]

7. This book notes that "everyone sees what you appear to be, few experience what you really are." This book compares a flooding river to Fortune, and presents the idea that "It's better to be impulsive than cautious." This book instructs rulers to be both a lion and a fox, and its seventeenth chapter states that it is better for a ruler to be feared than loved. For 10 points, name this political treatise dedicated to Lorenzo de Medici (may-DEE-chee) written by Machiavelli.
ANSWER: *The* ***Prince*** [or *Il* ***Principe***]

8. A revolution named for a component of this period of time is sometimes called the Agricultural Revolution, and featured men moving from a nomadic lifestyle to ones in permanent houses. Some historians argued that after it ended, the copper age began. This period of time is the first of C. J. Thomsen's three-fold division of prehistory, in which it precedes the Bronze Age. For 10 points, name this prehistoric age named for the material that comprised flint hammers.
ANSWER: **Stone** Age [or **Neolithic** Era or Age]

9. This food, cake, and meringue are served together in the dish Baked Alaska. NASA commissioned, but never used, the "freeze-dried" variant of this food designed for astronauts. Cardamom spice is often added to a dessert often compared to this one called *kulfi*. An Italian variant of this food that often incorporates more milk is called *gelato*. For 10 points, name this dessert manufactured by the company Ben and Jerry's.
ANSWER: **ice cream**

10. In this novel, the protagonist's sister fires a gun to fend off the advances of her former employer, who later shoots himself. In this novel, the protagonist is tormented by the detective Porfiry Petrovich (por-FEER-ee peh-TRO-vitch), who suspects him of murdering the pawnbroker Alyona Ivanovna (al-YO-nuh ee-VAHN-uv-nuh). For 10 points, name this novel about Raskolnikov (ros-KAHL-nee-koff) by Fyodor Dostoevsky (dahs-toy-EF-skee).
ANSWER: ***Crime and Punishment*** [or ***Prestupleniye i Nakazaniye***]

11. The city of Oxyrhynchus (OCK-see-RIN-kuss) in this river's delta has yielded many ancient texts. The construction of a dam on this river forced UNESCO to relocate the Abu Simbel temple complex. This river's natural flooding cycle was disrupted by the Aswan High Dam. The Rosetta Stone was found in this river's delta, which also contains the city of Alexandria. For 10 points, name the world's longest river, which flows through Egypt.
ANSWER: **Nile** River

12. Plants in this biome commonly have buttress roots due to the nutrient-poor soil. This biome's climate of the same name is A-f in the Köppen classification. Unlike a related temperate biome, it exists because of the ITCZ, or doldrums. This biome is stratified into canopy, understory, and floor levels, with the floor only receiving two percent as much sunlight as the canopy. For 10 points, name this very wet and diverse tropical biome whose largest example is the Amazon.
ANSWER: tropical **rainforest** [or lowland equatorial evergreen **rainforest**; prompt on forests]

13. A member of this family was a queen who had the Luxembourg Palace built as her residence. That woman was the scheming mother of French king Louis XIII and was named Marie. Another member of this family was the patron of his tutor, Galileo. A powerful leader of this family, Cosimo, used his bank to dominate a city in modern Tuscany. For 10 points, what Italian family dominated Florence during the Renaissance?
ANSWER: **Medici** (MED-ee-CHEE) family

14. The "complete" form of this process is called holo-metabolism. The last part of this process results in an imago (ih-MA-go). Iodine and thyroid hormone injections stress axolotls (ax-uh-LAW-tuls) into finishing this process and resorbing their gills. Organisms undergoing this process progress through larval and pupal stages and may build a cocoon. For 10 points, name this process in which a caterpillar transforms into a moth.
ANSWER: **metamorphosis** [prompt on molting]

15. The "slow-wave" form of this process is essential for memory consolidation. The pineal (PYE-nee-uhl) gland releases melatonin (mel-uh-TOH-nin) to signal the body to begin this process. Obese people can suffer from a namesake form of apnea during this process. This process is divided into non-REM and REM stages. Patients with insomnia are deprived of, for 10 points, what state contrasted with "wakefulness"?
ANSWER: **sleep**

 **VHSL Regular Season 2016-2017 - Round 16 - Directed Period**

1A. What literary family included the painter Branwell and the author of *The Tenant of Wildfell Hall*, Anne?
ANSWER: the **Bronte** (BRON-tay) family

1B. Under the influence of gravity alone, what shape will a projectile's path take after it is released in an upward and forward motion?
ANSWER: **parabola**

2A. In 2016, Gretchen Carlson, a former employee of what cable channel, sued former boss Roger Ailes, alleging sexual harassment?
ANSWER: **Fox** News Channel [or **FNC**]

2B. In what Oliver Wendell Holmes poem titled for a sea creature does the speaker hear a voice singing "build thee more stately mansions, O my soul"?
ANSWER: "The **Chambered Nautilus**"

3A. This is a 20-second calculation question. Anita has an unfair coin which will come up heads 40% of the time. If she flips the coin four times in a row, what is the probability she will get only tails?
ANSWER: **81/625** [or 0.**1296**]

3B. This is a 20-second calculation question. What is the absolute value of the phase shift of the function "sine of the quantity two x minus three?"
ANSWER: **3/2** [or **1.5**]

4A. What agency created in 1934 regulates the stock market and other such exchanges in the United States?
ANSWER: U.S. **Securities and Exchange Commission** [or **SEC**]

4B. What French phrase refers to an archetypal female character who seduces men and leads them to danger?
ANSWER: **femme fatale** (FEMM FUH-tahl)

5A. What British poet's last collection, *Birthday Letters*, was about his relationship with his deceased wife, Sylvia Plath?
ANSWER: Ted **Hughes**

5B. What man served twenty years as British Prime Minister and is generally listed as the first man to hold that position?
ANSWER: Robert **Walpole** [or the First Earl of **Orford**]

6A. Classical orchestras almost exclusively featured what percussion instrument comprised of four large upright drums?
ANSWER: **timpani** [or **kettledrum**]

6B. What gambling mecca near Hong Kong once belonged to Portugal?
ANSWER: **Macau** [or **Macao**]

7A. Which Persian philosopher and polymath wrote *The Canon of Medicine*, the standard medical textbook in Europe for 600 years?
ANSWER: **Avicenna** (AH-vuh-SEN-uh) [or Abu Ali al-Ḥusayn ibn Abd Allah ibn Al-Hasan ibn Ali **ibn Sina**]

7B. Hawking radiation is thought to be emitted by what supermassive objects, which are thought to be found at the centers of almost all galaxies?
ANSWER: **black hole**s [or **SMBH**s]

8A. This is a 30-second calculation question. In standard form, write the equation of a circle for which -7, 5 and 1, -1 are endpoints of a diameter.
ANSWER: **x + 3** quantity **squared plus y - 2** quantity **squared equals 25**

8B. This is a 30-second calculation question. What is the sum of the 10-term arithmetic series with first term 4, second term 10 and last term 58?
ANSWER: **310**

9A. What linebacker won the 2016 Super Bowl MVP after leading his Denver Broncos to victory over Cam Newton and the Carolina Panthers?
ANSWER: Vonnie "Von" **Miller** Jr.

9B. What is the term for the combining of different beliefs in one faith system, such as Santeria's combining Yoruba myth and Catholicism?
ANSWER: **syncretic** [or **syncretism**]

10A. The "opposite" of claustrophobia is what other phobia, often said to be the fear of wide, open spaces?
ANSWER: **agoraphobia**

10B. What volcano in Washington state erupted in 1980, killing 57 people?
ANSWER: Mount **Saint Helens** [or **Louwala-Clough** (loo-WALL-uh CLOFF); or **Lawetlat'la**; or **Loowit**]

 **VHSL Regular Season 2016-2017 - Round 16 - Third Period, Fifteen Tossups**

1. A dramatic monologue by this poet ends with the resolution "to strive, to seek, to find, and not to yield." In another poem, he described a group "stormed at with shot and shell." He wrote about an event in the Battle of Balaclava in his poem about the "noble six hundred" who rode "into the valley of Death." For 10 points, name this Victorian poet who wrote "Ulysses" and "The Charge of the Light Brigade."
ANSWER: Alfred, Lord **Tennyson**

2. A sub-location at this place was built on the village of Monowitz and was used to provide laborers for an I.G. Farben factory. A man who worked here was particularly interested in identical twins and was known as the "Angel of Death." In the book *Night*, this is the first place author Elie Wiesel (vy-ZELL) is taken by his captors. For 10 points, Josef Mengele (MENG-uh-LEE) was a Nazi doctor at what notorious concentration camp in Poland?
ANSWER: **Auschwitz** [or **Auschwitz**-Birkenau; or **Auschwitz**-Monowitz]

3. In this show, the video game reviewer Tom Yates admits that his dead roommate wrote his novel *Scorpio*. After a character on this show is fired by Tom Hammerschmidt, she starts working at the newspaper *Slugline*. This show's protagonist murders both the journalist Zoe (ZO-ee) Barnes and the Congressman Peter Russo before he becomes president. For 10 points, name this Netflix show in which Kevin Spacey plays the scheming politician Frank Underwood.
ANSWER: ***House of Cards***

4. This Biblical character is the first person to drink wine, leading him to curse his grandson when his son discovers him drunk in his tent. A covenant between this man and God is sealed with the appearance of a rainbow. This man's three sons were Sham, Ham, and Japheth, and a dove brought him an olive branch as a signal that a flood was receding. For 10 points, name this man who builds an ark on which are boarded many animals.
ANSWER: **Noah** [or **Noé**; or **Noach**]

5. One of these objects named Koh-i-Noor (CO-ee-noor) was taken during the Persian invasion of Delhi. Many of these objects are produced at Kimberley in South Africa. A curse supposedly befell the "Hope" one of these objects until it was displayed in the Smithsonian. De Beers sells these objects, which were controversially mined by child soldiers in Sierra Leone. For 10 points, name these precious jewels that are nicknamed "blood" if they fund warlords.
ANSWER: **diamond**s [prompt on jewels]

6. The protagonist of this opera imagines her husband's return in the aria "Un bel di." At the beginning of this opera, the marriage broker Goro shows a house to a naval officer. The title character of this opera commits suicide with her father's blade after she is abandoned by the American Lieutenant Pinkerton. For 10 points, name this opera about the Japanese woman Cio-Cio-San (cho-cho-SAHN), written by Giacomo Puccini (JAH-koh-mo poo-CHEE-nee).
ANSWER: ***Madame Butterfly*** [or ***Madama Butterfly***; do not accept "M. Butterfly"]

7. Along with Fred Archer, this man developed a photography method known as the Zone Scheme. This founder of the group f/64 (f-stop 64) photographed the Japanese-American internment camp Manzanar. Two of this man's photographs, *Clearing Winter Storm* and *Moon and Half Dome*, were both taken in central California. For 10 points, name this man known for photographing Yosemite National Park.
ANSWER: Ansel **Adams** [or Ansel Easton **Adams**]

8. Important detectors of these particles include IceCube and Super-Kamiokande. The flavors of these leptons are the electron, muon, and tau. This particle was originally suggested to make up the mass difference when a neutron decays into a proton and electron, a mechanism of beta decay proposed by Wolfgang Pauli. For 10 points, what nearly massless, neutral particles were incorrectly observed exceeding the speed of light in 2011 by the OPERA collaboration?
ANSWER: **neutrino**s

9. This city is where the journalist Glenn Greenwald currently resides. In June, images showed a shooter aiming at cars on the Red Line expressway in this city. A group of 150 scientists sent an open letter to the World Health Organization urging that an event in this city be cancelled. Jason Day and Jordan Spieth (SPAITH) declined to go to this city due to the threat of Zika virus. For 10 points, what Brazilian city is the host of the 2016 Summer Olympics?
ANSWER: **Rio** de Janeiro

10. This poem laments that "the best lack all conviction, while the worst are full of passionate intensity" and describes "a vast image out of Spiritus Mundi." This poem states, "things fall apart; the center cannot hold," and ends by asking "what rough beast, its hour come round at last, slouches towards Bethlehem to be born?" For 10 points, name this apocalyptic poem by William Butler Yeats.
ANSWER: "The **Second Coming**"

11. The fact that quarks contribute a negligible portion to this particle's spin is responsible for this particle's "spin crisis". This particle is the most common one used for collisions at the Large Hadron Collider. This particle consist of two up quarks and one down quark. The number of them in an atom determines the atomic number. For 10 points, name these positively charged particles that are usually bound to neutrons in atoms.
ANSWER: **proton**s

12. Instead of killing this politician, assassin George Atzerodt (at-ZER-ott) got drunk and was later arrested. This man aroused anger after he fired Edwin Stanton to violate the Tenure of Office Act. A War Democrat, he was added to the Republican presidential ticket to replace Hannibal Hamlin as a sign of national unity during the Civil War. For 10 points, what U.S. President was impeached by a Radical Republican Congress after he succeeded Abraham Lincoln?
ANSWER: Andrew **Johnson**

13. With Max Born and Pascual Jordan, this physicist developed the matrix mechanics formalism of quantum mechanics. In a letter to Wolfgang Pauli, this physicist derived a principle that can be stated as h-bar over two is less than or equal to the product of the standard deviations of position and momentum, which restricts our ability to precisely measure those two quantities simultaneously. For 10 points, identify this German namesake of the uncertainty principle.
ANSWER: Werner Karl **Heisenberg**

14. The narrator of this novel recalls how in his "younger and more vulnerable years" his father gave him advice he's been "turning over ever since." In this novel, the uncut pages of the books in the title character's library are pointed out by Owl-Eyes. In this novel, Myrtle Wilson is killed in a hit-and-run by Daisy Buchanan, the cousin of the narrator Nick Carraway. For 10 points, name this novel about a millionaire written by F. Scott Fitzgerald.
ANSWER: *The* ***Great Gatsby***

15. Conservative members of this institution, including James McReynolds, were known as the "Four Horsemen."A member of it, Owen Roberts, made the "switch in time that saved nine" by supporting minimum wage laws. An attempt to add new members for every member over seventy was known as a "packing" plan for this institution. For 10 points, Franklin Roosevelt wanted to increase the size of what institution because he disliked its anti-New Deal rulings?
ANSWER: The **Supreme Court** of the United States [or **SCOTUS**]

 **VHSL Regular Season 2016-2017 - Round 16 - Tiebreaker Questions**

1. This state is where the main office of Whole Foods Market is located. The amusement park Six Flags was founded here and has a name referring to the complicated history of this state. In 1900, the deadliest natural disaster in U.S. history occurred in this state, when 8,000 people were killed during a Category 4 storm. This state's first major oil well was located at Spindletop. For 10 points, what state was the site of the devastating Galveston hurricane?
ANSWER: **Texas**

2. In this novel, the protagonist's wife picks up and cooks stolen meat that the protagonist had thrown on the ground when his son gave it to him. This novel is the first in a trilogy including *A House Divided* and *Sons.* This novel follows a farmer who marries a slave from the House of Hwang named O-Lan. For 10 points, name this novel about Wang Lung by the American writer Pearl S. Buck.
ANSWER: *The* ***Good Earth***

3. The sum of this quantity *around* a closed loop is zero according to one of Kirchhoff's laws. This quantity is directly proportional to an inductor's inductance. This quantity is defined as the work required per unit charge to move a test charge between two points. This quantity is measured in relation to a reference potential called the ground. Ohm's law defines this quantity as the product of current and resistance. For 10 points, what electrical quantity is symbolized with a V?
ANSWER: **voltage** [or **electric potential** difference]

4. A hero of this kingdom was the subject of an epic by Blind Harry. This kingdom maintained the Auld Alliance with France and it was the original location of the Stone of Scone until Edward I captured the Stone and brought it to his country. A ruler of this kingdom, Robert the Bruce, won the Battle of Bannockburn against the hated English. For 10 points, William Wallace fought for the independence of what kingdom, which is now part of the United Kingdom?
ANSWER: Kingdom of **Scotland** [prompt on Kingdom of Great Britain; prompt on United Kingdom until "Auld" is read; do not accept "Kingdom of England"]

5. The companion piece to this painting features a working-class boy calling to unseen people. This painting's creator finished it about two years after the aforementioned *Bathers at Asnieres* (ahn-YAIR). A woman in an orange dress is fishing in this painting. Another woman in it holds a monkey on a leash. For 10 points, name this Pointillist painting of upper class Parisians relaxing by the Seine (SEHN) by Georges Seurat (sur-AH).
ANSWER: ***Sunday Afternoon*** *on the Island of La Grande Jatte* [or *Un* ***dimanche après-midi*** *à l'Île de la Grande Jatte*]

If f of x equals 2 x plus 3, and f of f of A is equal to 33, what is A?
ANSWER: **6**

At the Constitutional Convention, a compromise declared that in determining states' populations, slaves should count for what fraction of a full person?
ANSWER: **three-fifths** of a person