**VHSL Regular Season 2016-2017 - Round 02 - First Period, Fifteen Tossups**

1. This ruler killed himself shortly after the Vindex revolt broke out. He ordered the death of his own mother, Agrippina (UH-grup-ee-na) the Younger, who may have poisoned his predecessor as emperor. This man's death began the Year of the Four Emperors. He was just a teenager when he succeeded his adopted father, Claudius. For 10 points, what Roman Emperor used the AD 64 Great Fire of Rome as an excuse to persecute Christians?
ANSWER: **Nero** [or **Nero** Claudius Caesar Augustus Germanicus]

2. After he is called "Lathspell" (LAHTH-"spell"), this character says "I have not passed through fire and death to bandy crooked words with a witless worm." This character is rescued by Gwaihir (GWY-"here") from his activity on top of Orthanc (OR-"thank"). After dying fighting a Balrog, he is reborn as Saruman's (SAH-roo-mahns) successor. For 10 points, name this wizard played by Ian McKellan in *The Lord of the Rings*.
ANSWER: **Gandalf** the Grey [or **Gandalf** the White]

3. A player of the cornet in this city would often perform his offensive song "Funky Butt;" that man, Buddy Bolden, is sometimes credited with inventing a genre of music in this city. Local legend holds that after this city's Storyville district closed, jazz started to flourish in it. Zydeco music in this American city is part of the culture of its French-speaking Creoles. For 10 points, name this city in Louisiana, whose other musical festivities become popular during Mardi Gras.
ANSWER: **New Orleans**

4. The permeability and permittivity of free space are values measured with respect to this type of environment. A glass tube surrounding this type of environment was used by cathode ray tubes, the basis for CRT displays. Robert Hooke and Robert Boyle both improved upon air pumps intended to evacuate air and create this condition. For 10 points, what type of environment is characterized by a lack of matter and includes outer space?
ANSWER: partial **vacuum**s [or **free space** until it is read]

5. The fourth and final section of a novel by this author is set on Easter Sunday and focuses on the central family's black servant Dilsey. He wrote a novel narrated by the mentally disabled Benjy and suicidal Quentin Compson. Another of his novels traces the Bundren family's trip to bury their matriarch Addie. For 10 points, name this Southern novelist of *The Sound and the Fury* and *As I Lay Dying.*
ANSWER: William **Faulkner**

6. These cells can undergo affinity maturation. Large, malignant populations of these cells are found in the bone marrow in hairy cell leukemia. These cells can differentiate into plasma cells, which secrete immunoglobulins (ih-mew-no-GLOB-yu-linz). Antigens (AN-tih-jenz) are bound by their "memory" type. For 10 points, name these lymphocytes (LYMPH-oh-sytes) that produce antibodies and can be activated by T cells.
ANSWER: **B** cells [or **B** lymphocyte; or **plasma** cell before it is read; prompt on lymphocytes before it is read; prompt on white blood cells]

7. The Patriarch of Moscow possesses a white object of this type called a Koukoulion. A phrase meaning "small gourd" names a second example of this type of object that belongs to high-level clergy and is called a Zucchetto (ZUH-kett-OH). Bishops often possess a Mitre (MIGHT-er), which is a large one of these objects with a triangular top. For 10 points, name this article of clothing used in some religious rituals to cover the hair.
ANSWER: **hat**s [or skull**cap**s]

8. PTC and PROP are detected through gustducin (gust-DUCE-in) in fungiform (FUN-jih-form) papillae (PAH-puh-lye) by people with the "super" form of this sense. The glutamate (GLU-tuh-mate) in MSG triggers one of the qualities perceived through this sense called umami. It is assisted by olfaction. For 10 points, name this sense responsive to bitterness and detected through namesake buds on the tongue.
ANSWER: **taste** [or **gustation**; prompt on things like sensing bitterness]

9. In March 1938, this country nationalized its oil industry after the Maximato government ended. This country was led by the PRI for over 70 years until the PAN (P-A-N) won a 2000 election. Napoleon III supported Archduke Maximilian's short-lived claim to be its emperor. This country defeated the French at the Battle of Puebla on May 5, 1862, a date frequently confused for its independence day. For 10 points, Pancho Villa (VEE-yuh) was an insurgent in what country?
ANSWER: **Mexico** [or United **Mexican** States]

10. Claude Lorrain's influence on this painter can be seen in his *Dido Building Carthage*. This painter showed a ship that fought at Trafalgar being "tugged to her last berth to be broken up." A late painting by this artist of *The Fighting Temeraire* shows a train crossing Maidenhead Bridge during the early years of the Great Western Railway. For 10 points, name this British "painter of light" who produced *Rain, Steam and Speed*.
ANSWER: J.M.W. **Turner** [or Joseph Mallord William **Turner**]

11. A poem by this author begins, "'Twas mercy brought me from my pagan land." Her collection *Poems on Various Subjects, Religious and Moral* includes her poem "To His Excellency General Washington." She reflected on her origins in the poem "On Being Brought from Africa to America." For 10 points, name this former slave, the first published African-American poet.
ANSWER: Phillis **Wheatley**

12. This author juxtaposed the stories of Ruth and her mother Lu-Ling in her novel *The Bonesetter's Daughter.* Pearl Louie Brandt is one of the narrators of her novel *The Kitchen God's Wife.* The title group of another novel by this woman is made up of four mothers of immigrant families who play mahjong. For 10 points, name this Chinese-American author of *The Joy Luck Club.*
ANSWER: Amy **Tan**

13. This ruler's mother is only known as the "Younger Lady." This man had a deformed left foot and DNA tests have revealed he carries the oldest known genetic proof of malaria. He reversed many of the changes his father made by ending the worship of Aten and moving the capital back to Thebes. Howard Carter became famous after finding this man's treasure. For 10 points, what Egyptian pharaoh's nearly intact tomb was discovered in 1922?
ANSWER: King **Tut** [or **Tutankhamun** (TOO-tonk-AH-monn); or **Tutankhaten**]

14. An ongoing research project linked to this industry is an Asian country's NEWREP-A. A common term for carvings made from its byproducts is "scrimshaw." In 1986, the commercial form of this industry was technically halted in Japan amid protests from environmentalists. The ship *Essex*, which was out of Nantucket, sank while working in this industry. For 10 points, what industry involves the hunting of a certain ocean-dwelling mammal for its oil and blubber?
ANSWER: **whaling** [or **hunting whale**s]

15. For a polynomial with integer coefficients, if it has any roots of this type, the roots must contain factors of the constant coefficient and leading coefficient. Euclid proved by contradiction that the square root of two is not one of these numbers. These numbers are symbolized with a blackboard bold Q and their decimal representations either terminate or repeat infinitely. For 10 points, name these numbers that can be written as a ratio of two integers.
ANSWER: **rationals** [or **rational** numbers]

 **VHSL Regular Season 2016-2017 - Round 02 - Directed Period**

1A. Persephone (PERR-seff-UH-nee) stays for three months of the year in the underworld since she ate what fruit?
ANSWER: **pomegranate**

1B. What is the common name for the aquatic animals that belong to the phylum Porifera (pohr-IF-uh-ruh)?
ANSWER: **sponge**s

2A. What term describes properties like osmotic pressure and freezing point depression, which depend only on the concentration of a solute in a solution, but not the identity of the solute?
ANSWER: **colligative** properties

2B. What current Prime Minister of Israel suggested in October 2015 that a Muslim leader gave Adolf Hitler the idea for the Holocaust?
ANSWER: Benjamin "Bibi" **Netanyahu**

3A. This is a 20-second calculation question. Michael's trapezoid has an area of 40 units squared, and a height of 20 units. What is the sum of both bases of Michael's trapezoid?
ANSWER: **4** units

3B. This is a twenty-second calculation question. In slope-intercept form, what is the equation of the line with a slope of 6 that passes through the point four comma eight?
ANSWER: **y equals six x minus sixteen**

4A. In German, the words "der" ("dare"), "die" (DEE), and "das" (DAHSS) are used to denote what property of a noun?
ANSWER: **gender** [or **class**]

4B. What fort in northern New York was seized by Ethan Allen's Green Mountain Boys in the early part of the Revolutionary War?
ANSWER: Fort **Ticonderoga** [or Fort **Carillon**]

5A. What hideously scarred Batman villain flips a coin in order to make his decisions?
ANSWER: **Two-Face** [or **Harvey**; or **Dent**]

5B. What battle in Maryland was the bloodiest one-day battle during the Civil War?
ANSWER: Battle of **Antietam** [or Battle of **Sharpsburg**]

6A. What Greek is referred to as the "Father of History" for writing an account of the Greco-Persian Wars?
ANSWER: **Herodotus**

6B. What island south of mainland Japan is still home to Futenma and 31 other U.S. military bases?
ANSWER: **Okinawa**

7A. What naturalist American novelist wrote about railroad monopolies in *The Octopus*?
ANSWER: Frank **Norris** [or Benjamin Franklin **Norris** Jr.]

7B. What five-movement Beethoven symphony includes depictions of a "Scene by the Brook" and a "Shepherd's Song"?
ANSWER: ***Pastoral*** Symphony [or Symphony No. **6**]

8A. This is a 30-second calculation question. Consider a normally distributed data set whose mean is 70. If 58 has a z-score of -2, find the value for which the z-score is 3.
ANSWER: **88**

8B. This is a 30-second calculation question. A ladder that is ten feet long leans against the top of a building that is five feet tall. In degrees, what is the angle of elevation of the top of the building from the base of the ladder?
ANSWER: **30** degrees

9A. "What word meaning "evil" is derived from the Latin word for "left hand?"
ANSWER: **sinister**

9B. What contemporary British writer, the sister of Margaret Drabble, wrote the novel *Possession*?
ANSWER: A. S. **Byatt** [or Antonia Susan **Duffy**; or **A**ntonia Susan **Drabble**; prompt on Drabble]

10A. What phenomenon results from different wavelengths of light having different indices of refraction for the same material, allowing a prism to split white light into its constituent colors?
ANSWER: chromatic **dispersion** [prompt on prismatic effect]

10B. What Elizabethan poet wrote the prose romance *Arcadia* and the sonnet sequence *Astrophil and Stella*?
ANSWER: Philip **Sidney**

 **VHSL Regular Season 2016-2017 - Round 02 - Third Period, Fifteen Tossups**

1. The Royal Society once gave David Brewster a medal for his work on the polarization of this thing. The Michelson-Morley experiment proved that this thing did not need an "ether" to propagate. The astronomer Ole (oh-LEE) Romer used the moons of Jupiter to provide the first measurement of this thing's speed, showing that it was actually finite. For 10 points, name this thing, whose "white" variety can be refracted into several colors using a prism.
ANSWER: **light**

2. A player in this sport led his team to a World Cup victory by using a squash ball in his glove. The Duckworth-Lewis system is used to extrapolate scores when its matches are cut short. An abridged from of this sport is known as the "T20" format. Its luminaries include Ricky Ponting. This sport uses a hard, leather ball, and a flat bat. For 10 points, name this sport that involves trying to knock over the opposing team's wickets.
ANSWER: **cricket**

3. A painting by this artist depicts pink roses at the feet of a woman wearing a pink dress. This painter of *The Concert Singer* also showed George Holmes being observed by this artist's father in his *The Chess Players*. This artist showed seven naked men in *The Swimming Hole* and another painting by this artist shows himself among other students in an auditorium at Jefferson Medical College. For 10 points, name this American artist of *The Gross Clinic*.
ANSWER: Thomas **Eakins**

4. A central thesis of Thomas Piketty depends upon the rate of this phenomenon being lesser than the rate of return. The endogenous (en-DAH-juh-NUSS) model of this phenomenon is contrasted with a framework developed by Robert Solow and Trevor Swan. China has aspired to maintain rates of this phenomenon at around seven percent. For 10 points, name this phenomenon, the expansion of an economy over time.
ANSWER: economic **growth**

5. This god sired the immortal horse Arion with Demeter. This father of the giant Polyphemus (PAUL-ee-FEE-muss) sent two monsters to kill the Trojan priest Laocoon. Despite producing a salty spring, this god lost the contest to become the patron of Athens, prompting him to flood the city. This husband of Amphitrite (AMP-fuh-TRY-tee) is often depicted with a trident. For 10 points, name this Greek god of the sea.
ANSWER: **Poseidon** [or **Neptune**]

6. This man ran twice for governor of his state as a member of the Liberty Union Party during the 1970s. His spokesman tweeted the phrase "literally standing right behind you" in explaining what this politician was doing during the fight for health care. This former mayor of Burlington was criticized for his long delay in endorsing his opponent in a recent campaign. For 10 points, what Vermont Senator finally endorsed Democratic rival Hillary Clinton in July 2016?
ANSWER: Bernard "Bernie" **Sanders**

7. The hierarchy problem asks why this force is so much weaker than other forces, and Einstein posited it was the result of spacetime curvature. Accurate measurements of this force's constant were performed using a torsion balance by Henry Cavendish. Its magnitude is equal to the product of two masses divided by their separation squared all multiplied by big G. For 10 points, name this attractive force between bodies, which was discovered by Isaac Newton.
ANSWER: **gravity** [or **gravitational** force]

8. A ruler of this empire was captured at Cajamarca and placed in the Ransom Room shortly after he threw a Bible to the ground. It used the quipu (KEE-poo) system of colored strings to keep records. This empire was weakened after a civil war between brothers Huascar (WAH-scar) and Atahualpa (ATT-uh-WALL-pa). Its capital was at Cusco (KOOZ-co). For 10 points, Francisco Pizarro conquered what empire centered in modern-day Peru?
ANSWER: **Inca**n Empire

9. This movement divided institutions into New Lights, who supported it, and Old Lights, who did not. A leader of this movement, George Whitefield, spoke to crowds of over 30,000. Another prominent leader in this movement talked about the punishment awaiting the wicked in his "Sinners in the Hands of an Angry God" sermon. For 10 points, what 16th century movement featured Jonathan Edwards staging numerous religious revivals in the American colonies?
ANSWER: **Great Awakening** [or First **Great Awakening**; do not accept "Second Great Awakening"]

10. The protagonist of this novel is given two silver candlesticks by a bishop after being caught stealing the rest of the bishop's silverware. In this novel, the protagonist becomes a mayor under the pseudonym Monsieur Madeleine. In this novel, the prostitute Fantine's daughter Cosette is raised by the protagonist, who is pursued by Inspector Javert (zhah-VAIR). For 10 points, name this novel about the ex-convict Jean Valjean written by Victor Hugo.
ANSWER: *Les* ***Miserables*** (lay MEE-zair-AHB)

11. This poet addressed "ye living lamps, by whose dear light the nightingale does sit so late" in his poem "The Mower to the Glow-Worms." He wrote the couplet, "The grave's a fine and private place, but none, I think, do there embrace" in a seduction poem beginning with the line, "Had we but world enough and time." For 10 points, what English poet wrote "To His Coy Mistress"?
ANSWER: Andrew **Marvell**

12. This man persuaded the serial killer Angulimala (AHN-goo-lee-MAH-lah) to repent shortly after delivering a sermon at the "Deer Park" to the first members of the sangha. This man saw a sick man, a corpse, and a fanatic ascetic after years of being shielded from the world, which caused him to formulate the Eightfold Path and the Four Noble Truths. For 10 points, name this man who theorized on how to attain nirvana as the founder of a large Asian religion.
ANSWER: Gautama **Buddha** [or Siddhartha **Gautama**]

13. This country requested that the United States extradite American businessman Warren Anderson for his role in the 1984 deaths of thousands here. At least 3,000 people died when a Union Carbide pesticide plant, possibly due to sabotage, had a gas leak at this country's city of Bhopal (BOH-pawl) in the state of Madhya (MOD-yah) Pradesh. For 10 points, the southern part of what Asian country features the Deccan Plateau?
ANSWER: Republic of **India**

14. A member of this family proposed that the President be called "His Majesty" and was mocked with the name "His Rotundity." Another member of this family wrote "remember the ladies" to her husband and Congress in March 1776. A member of this family lost the presidency in the "Revolution of 1800" to his own Vice-President, Thomas Jefferson. For 10 points, name this family, whose members included Abigail and her husband, the second U.S. President, John.
ANSWER: **Adams** [or John **Adams**; or Abigail **Adams**]

15. The Cori cycle transports the products of a type of this process to the liver. Acetaldehyde (aa-sit-AL-duh-hide) is used as an electron acceptor in a form of this process to oxidize N-A-D-H, thereby replenishing N-A-D-plus. That form of it eventually converts pyruvate to ethanol. Muscles perform another type of this process that generates lactic acid as a product. For 10 points, name this anaerobic process used in the production of beer and bread.
ANSWER: **fermentation** [or ethanol **fermentation**; or lactic acid **fermentation**]

 **VHSL Regular Season 2016-2017 - Round 02 - Tiebreaker Questions**

1. This instrument was played by the jazz musician James Johnson, who used his right hand to create syncopated melodies while performing in its "stride" style. A song originally composed for this instrument was adapted by Marvin Hamlisch for the film *The Sting*. That song for this instrument, "The Entertainer," was composed by Scott Joplin. For 10 points, name this instrument often used in ragtime music, which has numerous ivory and ebony keys.
ANSWER: **piano**

2. Ancient historians claimed this man died after eating poisoned figs given him by Livia. He shouted "give me back my legions!" after Germanic tribes crushed his army at Teutoburg Forest. Agrippa commanded this future ruler's fleet at the Battle of Actium, where he defeated a former ally and lover of Cleopatra named Mark Antony. For 10 points, what adopted heir of Julius Caesar became the first Roman Emperor?
ANSWER: **Augustus** [or Gaius **Octavius**; or **Octavian**; prompt on Caesar]

3. An *Agro-bacterium* species is named for its ability to cause growth of a type of these structures in plants called crown galls. When they appear in the pituitary (pih-TU-uh-tare-ee) they can cause gigantism. Glands can develop a form of these structures called an adenoma (ad-uh-NO-ma), which can sometimes transform into carcinoma and metastasize (muh-TAS-tuh-size). For 10 points, name these abnormal proliferative growths that are malignant in cancer.
ANSWER: **tumor**s [or **neoplasm**s; or **neoplasia**; or crown **gall**s before it is read; prompt on cancer before it is read]

4. In a novel by this author, Zoyd Wheeler and his daughter Prairie hide from Brock Vond. This author of *Vineland* wrote about the mysterious Tristero postal group in his novel about Oedipa (ED-uh-PA) Maas. He also created Lieutenant Tyrone Slothrop, whose erotic encounters are linked to V-2 rocket explosions. For 10 points, name this postmodernist American novelist who wrote *The Crying of Lot 49* and *Gravity's Rainbow*.
ANSWER: Thomas **Pynchon**

5. A snake sheds its skin after it steals this person's herb of immortality. This man makes a journey to see the survivor of a great flood named Utnapishtim (OOT-nuh-pish-TIM) after his friend, a "wild man," dies. This man angered the love goddess Ishtar when he slew the Bull of Heaven with his companion Enkidu. For 10 points, name this king of Uruk, who is the subject of a Sumerian epic poem.
ANSWER: **Gilgamesh**

What is the value of five pi over six radians converted to degrees?
ANSWER: **150** degrees

What Dutch painter depicted his hometown in *View of Delft* and showed a girl wearing a blue turban in his portrait *Girl with a Pearl Earring*?
ANSWER: Jan **Vermeer** [or Johannes **Vermeer**; or Johan **Vermeer**]