**VHSL Regular Season 2016-2017 - Round 07 - First Period, Fifteen Tossups**

1. This man succeeded Arthur Fiedler as the principal conductor of the Boston Pops from 1980 to 1993. He composed pieces that are currently used as the themes for *NBC Nightly News* and *The Today Show*. This composer used an alternating pattern of F and F sharp as the theme for a movie that was the second of his collaborations with Steven Spielberg. For 10 points, name this composer of the scores for such films as the *Star Wars* series and *Jaws*.
ANSWER: John **Williams**

2. A man who used to live in this city flees with his daughters to Zoar. Two angels visit this city to find only ten righteous people but are attacked by a lustful mob. A woman who used to live here looks back towards it and is turned into a pillar of salt. Abraham's nephew, Lot, flees from this city before it is destroyed, along with the other sinful "cities of the plain." For 10 points, the Book of Genesis pairs what city with Gomorrah?
ANSWER: **Sodom**

3. A woman with this name had a secretary named David Rizzio who was brutally stabbed by her husband, Lord Darnley. Another woman with this name was the second wife of Spain's Philip II, giving him control over England. A ruler with this name executed Lady Jane Grey and imposed pro-Catholic persecutions later reversed by her half-sister. For 10 points, what name was held by Henry VIII's oldest daughter and by a Scottish queen who clashed with Elizabeth I?
ANSWER: **Mary** [or **Mary I**; or **Mary, Queen of Scots**]

4. In a low-angle close-up, a character in this film recalls what Clemenceau (KLEH-men-so) said about war and smokes a cigar before mentioning a conspiracy to "impurify all of our precious bodily fluids." In this film, a wheelchair-bound scientist explains his plan for repopulating the Earth after Major Kong flies his bomber through Russian defenses and drops its payload. For 10 points, name this Stanley Kubrick film, a black comedy about a nuclear holocaust.
ANSWER: ***Dr. Strangelove****, or: How I Learned to Stop Worrying and Love the Bomb*

5. A character in this poem bites his arm to suck some blood so that he can cry out "a sail! a sail!" The title character of this poem uses his "glittering eye" to transfix the Wedding-Guest and tell his story. The line "water, water, everywhere" appears in this poem as the title character recalls the curse he brought upon his ship. For 10 points, name this ballad about a sailor who shoots an albatross written by Samuel Taylor Coleridge.
ANSWER: "The **Rime of the Ancient Mariner**"

6. This property is related to pressure change by the Young-Laplace equation. This property creates an internal pressure in a liquid because molecules near the exterior of a liquid don't have an equal distribution. This property is a consequence of liquids tending minimize their exposed area. This property can be lowered by surfactants and it is responsible for the formation of a meniscus. For 10 points, what property of liquids allows some bugs to literally walk on water?
ANSWER: **surface tension**

7. This novel begins with an introductory essay called "The Custom-House" in which the narrator discovers a package containing the title object. In this novel, Roger Chillingworth torments the conscience-stricken Reverend Arthur Dimmesdale. In this novel, as punishment for adultery, Hester Prynne is forced to wear the title piece of cloth. For 10 points, name this novel by Nathaniel Hawthorne.
ANSWER: *The* ***Scarlet Letter***

8. In 2009 a man in this Cabinet post said in a Black History Month speech that the U.S. was "essentially a nation of cowards." The first Cabinet member to ever be held in contempt of Congress held this post. Its current holder had a conversation on her parked jet with Bill Clinton that occurred during the investigation into Hillary Clinton's emails. For 10 points, what Cabinet position was held in the Obama administration by Eric Holder and Loretta Lynch?
ANSWER: United States **Attorney General** [or **AG**]

9. A story claims that this ruler was told to "stand a little out of my sun" by the philosopher Diogenes (DIE-ah-JOH-neez). This man's generals, the Diadochi (DIE-uh-DO-shee), fought a civil war after his death and included Ptolemy (TAHL-uh-mee) of Egypt. Tutored by Aristotle, he succeeded his father, Philip II, as ruler. This conqueror pushed as far as India before finally being forced to turn back. For 10 points, what Macedonian ruler conquered the Persian Empire?
ANSWER: **Alexander the Great** [or **Alexander III** of Macedon; prompt on Alexander]

10. A solution in radicals to polynomials of this degree was ruled impossible by the Abel-Ruffini theorem. Two over this number times x to this power over two is the integral of x to the three-halves. This many statistical parameters are plotted on box-and-whisker plots. The logarithm of this base applied to the number 125 yields three. The sum of the internal angles of a polygon with this number of sides is 540 degrees. For 10 points, pentagons have how many sides?
ANSWER: **five**

11. A theater group based on this peninsula helped launch the career of Eugene O'Neill. Barnstable County contains the entirety of this peninsula, which begins at Buzzards Bay. Its city of Woods Hole is the base of many oceanic research institutions. Martha's Vineyard is south of this peninsula, whose city of Provincetown was where the Mayflower Compact was signed. For 10 points, identify this peninsula in eastern Massachusetts named for a fish.
ANSWER: Cape **Cod**

12. In the opening of this book, its author claims, "The mass of men lead lives of quiet desperation." This book's author enumerates the expenses and income from growing his own crop of beans in its chapter "The Bean-Field." In this book, the author describes his years of living in relative isolation in a cabin by the title pond. For 10 points, name this book by Henry David Thoreau.
ANSWER: ***Walden***

13. The rocket equation is an adaptation of this law for variable-mass systems. Using this law and Coulomb's law allows one to calculate the acceleration of a charged particle in an electric field. The equation describing simple harmonic motion can be found by setting Hooke's Law equal to the right-hand-side of this law. It is equivalently stated as: the time derivative of momentum equals force. For 10 points, what law states that force equals mass times acceleration?
ANSWER: Isaac **Newton's second law** [prompt on second law; prompt on F equals m a until "force equals mass times acceleration" is read]

14. Along with wages, these items are held to be sticky when their levels are unusually resistant to change. A consumer index named for these items is used to calculate inflation levels. A tariff increases the level of these items, which are represented on the vertical axis of a graph whose horizontal axis displays quantity. For 10 points, name these amounts that must be paid to acquire a good.
ANSWER: **price**s

15. Officials in this civilization were bribed by the Numidian ruler Jugurtha (JUG-urf-UH). It fought its former allies in the Social War, some years after triumphing over the Samnites. A civil war that nearly tore this civilization apart pitted the generals Sulla and Marius against each other. Leaders in this civilization included Crassus and Pompey, part of the First Triumvirate. For 10 points, what civilization's social classes included patricians and plebeians (PLEEB-ee-uns)?
ANSWER: **Roman** civilization [or **Rome**; or the **Roman** Republic; or **Roman** Empire]

 **VHSL Regular Season 2016-2017 - Round 07 - Directed Period**

1A. Which Serbian tennis player, the top-ranked player in the world, won four consecutive Grand Slam tournaments starting with the 2015 Wimbledon?
ANSWER: Novak **Djokovic** (JOKE-oh-VICK)

1B. What scale is used to classify hurricanes as Category 1 through Category 5, based on their wind speed?
ANSWER: **Saffir-Simpson**  hurricane wind scale [or **SS**HWS; or **SS**HS]

2A. What mountain, called the "Mount of Corruption" in the Old Testament, is the location of Jesus's ascent into Heaven?
ANSWER: **Mount of Olives** [or Mount **Olivet**]

2B. What savanna region stretches across the part of Africa directly below the Sahara Desert?
ANSWER: **Sahel** (suh-HELL)

3A. This is a 20-second calculation question. Dmitri has two points: point A is at 1,-1 and point B is at 3, 1. The distance between Dmitri's two points is the square root of what whole number?
ANSWER: **8**

3B. This is a 20-second calculation question. Big Al is dealt three cards from a standard 52-card deck without replacement. What is the probability that all three are the same?
ANSWER: **1/425**

4A. In what novella by John Steinbeck does the diver Kino discover the title jewel?
ANSWER: *The* ***Pearl***

4B. The triple alpha process in stars, in which carbon is formed from helium, is an example of what kind of nuclear reaction?
ANSWER: nuclear **fusion** reaction

5A. What set of photosynthesis reactions taking place in the stroma is also improperly called the "dark reactions" and uses RuBisCo?
ANSWER: **Calvin** cycle [or **light-independent** reactions; or **Calvin**-Benson-Bassham cycle; or **C3** cycle]

5B. The Latin letters c, x, and q are used to indicate click consonants in what Bantu family language native to South Africa?
ANSWER: **Xhosa** (KOH-suh)

6A. What Italian director made *La Dolce Vita* and the autobiographical film *8 1/2*?
ANSWER: Federico **Fellini**

6B. What author wrote the short story "The Swimmer," in which Neddy Merrill decide to go home via all the pools in the county?
ANSWER: John **Cheever**

7A. Babies are often wrapped in what kind of clothes designed to limit their movement?
ANSWER: **swaddling** clothes [or **swaddle**]

7B. In April 2016, the Treasury Department announced that what woman would replace Andrew Jackson on the twenty dollar bill?
ANSWER: Harriet **Tubman** [or Araminta **Ross**]

8A. This is a 30-second calculation question. If f of x equals x-cubed minus twenty-five x, then the reciprocal of f of x is not defined at what values of x?
ANSWER: x = **0**, x = **5**, x = **-5**

8B. This is a 30-second calculation question. In triangle ABC, the length of side AB is five centimeters, the length of side BC is eight centimeters, and the length of side AC is seven centimeters. What is the measure of angle B?
ANSWER: **60 degrees**

9A. What first Prime Minister of India was also the father of Indira Gandhi?
ANSWER: Jawaharlal (JAW-uh-HAR-lal) **Nehru** (NAY-roo) [or Pandit **Nehru**]

9B. A 1791 rebellion in Pennsylvania was named for what product, the subject of an unpopular federal tax?
ANSWER: **whiskey** [prompt on alcohol]

10A. What father-son duo were both Prime Ministers of Great Britain, with the elder receiving credit for Britain's success in the Seven Years War?
ANSWER: William **Pitt** [or the **Pitt**s]

10B. What religious poet included "Easter Wings" and three poems titled "Love" in his collection *The Temple*?
ANSWER: George **Herbert**

 **VHSL Regular Season 2016-2017 - Round 07 - Third Period, Fifteen Tossups**

1. In the 1970s, this country launched the high-speed rail network TGV. Norman Foster helped design this country's Millau (MEE-yoh) Viaduct, the world's tallest bridge. A territory of this country in South America contains a launch site for the European Space Agency. Around 75% of this country's energy is produced by nuclear power. With Britain, it co-produced the supersonic Concorde jet. For 10 points, name this country served by Charles de Gaulle (GALL) Airport.
ANSWER: **France** [or **French Republic**; or **République Française**]

2. Nanotubes and buckyballs composed of this element are classified as fullerenes (FUH-lehr-eens). This element can form a two-dimensional honeycomb lattice called graphene. An isotope of this element with two extra neutrons has a half-life of 5,730 years. An allotrope of this element is assigned a value of 10 on the Mohs scale. For 10 points, what element's various allotropes include graphene, graphite, and diamond?
ANSWER: **carbon** [or **C**]

3. The formation of this object's crater Eratosthenes (air-uh-TAHS-thuh-neez) marks the end of this object's Imbrian period. Its internal structure most likely formed after its global magma ocean cooled and solidified. This object may have been created after an impact event involving the hypothetical body Theia (thee-uh). A basaltic mare (MAH-ray) on this object is called the Sea of Tranquility. For 10 points, identify this only permanent, natural satellite of Earth.
ANSWER: the Earth's **Moon**

4. After awaking from a dream induced by this substance, Samuel Taylor Coleridge wrote down "Kubla Khan," but was interrupted by the person from Porlock. Thomas de Quincey described his drug addiction in a book titled "Confessions of an English" eater of this substance. For 10 points, name this drug, the source of which puts the protagonists of *The Wizard of Oz* to sleep when they cross a poppy field.
ANSWER: **opium**

5. Events in this city were the subject of the Supreme Court case *Browder v. Gayle*. The Dexter Avenue Baptist Church here was led by a pastor who became a civil rights activist. Protesters marched from Selma to this city in the 1960's to advocate for voting rights. In this city, Martin Luther King led a campaign after Rosa Parks refused to surrender her seat to a white person. For 10 points, what Alabama city was the site of a 1956 bus boycott?
ANSWER: **Montgomery**

6. This composer developed a theory of the "Gesamtkunstwerk" (geh-zahmt-KUNST-vairk), or "total artwork," to describe his operas. This composer's opera *Twilight of the Gods* concludes his cycle of four giant mythological operas, the second of which includes the "Ride of the Valkyries." For 10 points, name this German composer whose operas include *Tristan und Isolde* (ee-ZOL-duh) and *The Ring of the Nibelung* (NEE-buh-lung).
ANSWER: Richard **Wagner** (VAHG-ner)

7. A poem by this author includes the lines, "Ah, but a man's reach should exceed his grasp, or what's a heaven for?" Another poem by this author describes a painting by Fra Pandolf of a woman with a heart "too soon made glad" who was murdered by her husband, the Duke of Ferrara. For 10 points, name this Victorian poet who wrote dramatic monologues such as "Andrea del Sarto" and "My Last Duchess."
ANSWER: Robert **Browning**

8. Higher wavelength versions of these devices are manufactured on gallium arsenide phosphide wafers. The 2014 Nobel Prize in physics went to three Japanese physicists for their work on efficient blue varieties of these devices. Light bulbs based on these devices are much more efficient than incandescent or compact fluorescent bulbs. For 10 points, what type of diodes produce light and can be used to make monitors and TVs?
ANSWER: **LED**s [or **light-emitting diode**s]

9. This island's "White Terror" was part of martial law that ended in 1987 after almost 40 years. In 1971, its government lost its spot on the UN Security Council. Singapore, Hong Kong, South Korea, and this island were the four strong economies known as the Asian Tigers. After being overthrown, the Kuomintang (KWAM-uh-TONG) Nationalists under Chiang Kai-shek came to this island. For 10 points, what island claims to be the official Republic of China?
ANSWER: **Taiwan** [or the **Republic of China** until it is mentioned; or **ROC** until "Republic" is mentioned; do not accept or prompt on "China"; do not accept or prompt on "People's Republic of China"]

10. The stretch rule gives conditions under which this quantity remains unchanged. This quantity can translated through space using the parallel-axis theorem. Objects with the same mass and radius, but different shapes, can take different amounts of time to roll down a ramp due to differences in this quantity. For a point mass, it is given as mass times radius squared. For 10 points, name this rotational analogue of mass, symbolized by I.
ANSWER: **moment of inertia** [or **I** until it is read; or **angular mass** or **rotational inertia** until "rotational" is read]

11. During this decade, the group Irgun bombed a British headquarters in the King David Hotel attack. The Green Line was created at the end of this decade after a war between a country and its Arab neighbors. David Ben-Gurion became the first Prime Minister of a country during this decade, which featured the British losing control of Palestine. For 10 points, in what decade was the modern-day State of Israel created, an event that followed the Holocaust?
ANSWER: The **1940's** [prompt on the Forties]

12. This actress plays cutthroat debater Ginny Ryerson in the 2007 film *Rocket Science*. In the film *Up in the Air* she played George Clooney's protege (PRO-toh-JAY), Natalie Keener. She plays Jessica Stanley, best friend of Bella Swan, in the *Twilight* series. In her most famous role she performs the Cups Song for her audition for the Bellas, a female a capella group. For 10 points, name this actress who portrays Beca, the main character of *Pitch Perfect*.
ANSWER: Anna **Kendrick**

13. This event is signaled by the howling of a dog named Garm, who runs free to cause havoc. In one story, Lif and Lifprasir are two humans who survive this event by hiding in a wood and thus end up repopulating the world afterwards. During it, Vidarr avenges his father by ripping apart the mouth of a giant animal. Both Frey and Odin are killed during this event. For 10 points, what event in Norse mythology features the death of many gods?
ANSWER: **Ragnarok** [or **Ragnarokkr** (RAG-nuh-ROCK-err); or **Twilight of the Gods**; or **Gotterdammerung** (GOT-uh-DAM-er-UNG); prompt on Fate of the Gods]

14. A legendary example of one of these animals named the Chollima became a symbol of prosperity for the North Korean people. Thor used one of these animals with a golden mane named Gullfaxi. Hippogriffs are a combination of an eagle and this animal. Although it is not a goat, a virgin was supposedly needed to capture an animal who resembled this one that had a single horn. For 10 points, name this type of animal, a fabled example of which is a unicorn.
ANSWER: **horse**

15. Jean Metzinger's *Tea Time* was called the "Mona Lisa of" this art movement. Louis (LOO-ee) Vauxcelles (VOE-cell) coined this movement's name in a criticism of the painting *Houses at L'Estaque* (lez-TAHK). Juan Gris (GREASE) and Fernand Leger (LESH) were members of this movement. For 10 points, name this art movement started by Georges Braque (BROCK) and Pablo Picasso that emphasized reassembled objects with simple geometric forms.
ANSWER: **Cubism**

 **VHSL Regular Season 2016-2017 - Round 07 - Tiebreaker Questions**

1. One poem of this type begins by addressing "ye laurels" and "ye myrtles brown." Another poem of this type imagines "some mute inglorious Milton" and "some Cromwell guiltless of his country's blood." John Milton's "Lycidas" is a poem of this type written for Edward King. Thomas Gray wrote one of these poems "in a Country Churchyard." For 10 points, name this type of poem written to mourn the dead.
ANSWER: **elegy**

2. This politician delivered a speech in Florida to the National Association of Evangelicals referring to the "aggressive impulses" of an evil empire. A plan to defend the United States from intercontinental ballistic missiles was the subject of this president's so-called "Star Wars" initiative. There is speculation that he was suffering from Alzheimer's disease during his presidency. For 10 points, name this Republican president who served from 1981 to 1989.
ANSWER: Ronald **Reagan**

3. By one account, these figures clubbed the giant Thoas to death. Apollo once got these deities drunk to save his friend Admetus from death. The Romans called these deities the *parcae*, and the Greeks sometimes called them the *moirae*. Clotho, Lachesis (LAH-kay-SUSS), and Atropos were the name of these figures, who spun, measured, and cut a certain thread belonging to a mortal. For 10 points, name these three deities who managed the life of humans.
ANSWER: **Fates** [or ***moirae*** until read; or ***parcae*** until read]

4. This philosophical work was divided into three parts in Bertrand Russell's *A History of Western Philosophy*. Its tenth and final book discusses the myth of Er, while the beginning of this philosophical work discusses different definitions of justice. This work presents a case comparing "the effect of education and the lack of it on our nature." For 10 points, name this work containing the Allegory of the Cave which describes the ideal world, written by Plato.
ANSWER: *The* ***Republic*** [or ***Politeia***]

5. The prerequisite conditions for these objects were revised after Mike Brown's discovery of TNOs such as Eris and Sedna. Since 2006, the prerequisite conditions for these objects have included "clearing their neighborhood." In the Solar System, they are split into the inner, terrestrial ones and the outer, gas giant ones. In the heliocentric model, these objects revolve around the Sun. For 10 points, the Solar System has eight of what objects, including Mercury?
ANSWER: **planet**s

What is the complete factorization of the polynomial two x cubed plus three x squared minus eighteen x minus twenty-seven?
ANSWER: **quantity x minus three times quantity x plus three times quantity two x plus three** [quantities can be in any order]

What large island in the Sea of Okhotsk (oh-KAWTSK) was once the subject of a dispute between Russia and Japan?
ANSWER: **Sakhalin**