LADUE INVITATIONAL SPRING TOURNAMENT 2012

Round 15

TOSS-UPS

1. This man included the maxim "Live plainly, work hard" as part of his Eight Honors and Eight Shames program, and his Scientific Development Concept is aimed at producing a "Harmonious Society." This leader named "twenty forbidden areas" of television broadcasting, and he dismissed mayor **(*)** Meng Xuenong in the aftermath of the SARS epidemic. He succeeded Jiang Zemin in his current post, and his current Premier is Wen Jiabao. For ten points, identify this current General Secretary of the Communist Party and President of the People's Republic of China.
ANSWER: **Hu** Jintao
<MS>

2. The only air attack at this battle resulted in the sinking of the USS *Bismarck Sea*, and Major Howard Connor credited the Navajo code talkers for their victory at this battle. Also called Operation Detachment, one side's defense during this conflict was modeled after the Battle of Peleliu and was led by General Tadamichi Kuribayashi, while men such as Ira Hayes and John Bradley became famous for fighting in this battle thanks to the actions of **(*)** Joe Rosenthal. It was responsible for one-third of all Marine Corps casualties during World War II, and of the 22,000 Japanese forces, only 216 were taken prisoner. For ten points, identify this island invasion which was immortalized by a photo showing soldiers on Mount Suribachi raising the U.S. Flag.
ANSWER: Battle of **Iwo Jima** (accept **Operation Detachment** early)
<EnzeC>

3. In chemistry, this term names a transition state in the Prilezhaev reaction, which describes a mechanism by which peroxyacids and alkenes react to form epoxides. The solar cycle can be visualized by plotting sunspots on a diagram named for this entity. In chaos theory, this term names an effect which posited that the formation of a **(*)** hurricane could be contingent on the behavior of these entities. A black and orange one of these exemplifies Müllerian mimicry because it resembles another one of them that feeds on milkweed and is poisonous to birds. For ten points, name this term which most commonly refers to an insect, such as the Viceroy and Monarch ones, which emerges from the chrysalis of a caterpillar.
ANSWER: **butterfly**
<HX>

4. This author wrote "You may trod me in the very dirt/ But still, like dust, I'll rise" in one poem, and wrote of men who "liked my smile, my wit, my hips" in another. That poem, "They Went Home" is the first poem found in this author's collection *Just Give me a Cool drink of water 'fore i diiie.* This author also wrote a work that commands the reader to say, "very simply, with hope, Good Morning". That work was read at **(*)** Bill Clinton's inauguration, and was entitled, "On the Pulse of Morning". Her most famous work describes the title creature that "leaps/ on the back of the wind/ and floats downstream". For ten points, name this American author of *I Know Why the Caged Bird Sings*.
ANSWER: Maya **Angelou** (accept Marguerite Ann **Johnson**)
<KT>

5. One these entities claimed that "If we build a settlement, Di will not obstruct, but approve," and the significance of these objects was finally determined in 1899. Over 100,000 of these objects have been excavated at Anyang, although their applications were replaced by hexagrams in the *I Ching*. They bear the earliest known form of Chinese writing, and a bronze pin was used to inscribe characters on them before heating them and **(*)** interpreting the cracks. For ten points, identify these religious artifacts, often from the skeleton of an ox or turtle, that were used during the Shang dynasty to divine the future.
ANSWER: oracle **bone**s (accept "**jiagu**pian" and equivalents)
<EnzeC>

6. The sum of the first *n* squares of these numbers is a product of two consecutive ones, and the generating function for these numbers is *x* over the quantity one minus *x* minus *x*-squared. These numbers are given by Binet's formula. This sequence satisfies the same pattern as the Lucas Sequence, and the ratio of successive terms in this sequence approaches **(*)** phi, the golden ratio. Many of these numbers appear in nature and this sequence was originally used by Leonardo of Pisa to model the reproduction of bunnies. For ten points, identify this sequence beginning one, one, two, three, five, in which each term is the sum of the prior two.
ANSWER: **Fibonacci** sequence
<MS>

7. During this figure's rule, Rome annexed the Bosporan Kingdom and his general Corbulo won control of Armenia from the Parthians. He built a palace called the Golden House and sent Vespasian to quell a revolt in Judaea. This emperor suppressed the Vindex Rebellion and executed Seneca the Younger for his role in Piso's Conspiracy. The victory of his general Gaius Suetonius Paulinus at the Battle of (*) Watling Street put down a rebellion of the Iceni tribe led by Boudicca. His death heralded the Year of the Four Emperors. He murdered his mother Agrippina the Elder and was preceded by Claudius. For ten points, identify this Roman emperor who allegedly "fiddled as Rome burned."
ANSWER: **Nero** Claudius Caesar Augustus Germanicus (or **Nero** Claudius Drusus Germanicus)
<JD>

8. In one scene in this film, a singing of "La Marsallaise" causes a nightclub to be closed by the Germans in retaliation. This film ends with one character walking away on an airfield saying "I think this is the beginning of a beautiful friendship" after he is asked to join the Free French Forces. The song "As Time Goes By" is sung in another famous scene in which one character says (*) "Play it once, Sam, for old times′ sake." For ten points, name this iconic 1942 film in which Victor Lazlo and Ilsa Lund try to convince her former lover, Rick, to give them letters of transit from the title North African city, starring Ingrid Bergman and Humphrey Bogart.
ANSWER: *__Casablanca__*
<LC>

9. This compound is found naturally in minerals such as nahcolite, and it precipitates out of a reaction between carbon dioxide, water, and soda ash. Along with ammonium chloride, this compound is the product of an intermediary step in the Solvay process, and it is used in dry chemical fire extinguishers because it can undergo a dehydration reaction to produce carbon dioxide. Found dissolved in (*) bile, this substance is used to neutralize the stomach acid, and is also a common leavening agent. A volcanic eruption can be visually represented by adding vinegar to, for ten points, what white powder with chemical formula $NaHCO_3$?
ANSWER: **sodium bicarbonate** (accept **sodium hydrogen carbonate** or **baking soda** or **$NaHCO_3$** before read; do not accept or prompt "sodium carbonate" or "baking powder")
<EnzeC>

10. This play formed the basis for W.H. Auden's *The Sea and the Mirror*. One character in this work states, "too light winning [may] make the prize light," and another claims, "We are such stuff as dreams are made on." The opening of this play occurs after Claribel is married to the King of Tunis. The drunkards Stephano and Trinculo attempt to rebel in this work, and they ally with the son of (*) Sycorax, but their plots ultimately fail, and this play sees King Alfonso of Naples try to find his son, Ferdinand. Caliban and Ariel appear in, for ten points, what Shakespearean play about the magician Prospero?
ANSWER: The *__Tempest__*
<KT>

HALFTIME

11. In this painting, a cherry tree is barely visible through the window, and one fruit sits on the windowsill. Three other fruits rest on a table that is directly above two wooden clogs in this work. A lit candle on the brass chandelier can be visible in the upper portion of it, symbolizing unity. In the bottom of this painting, a brown (*) dog looks at the observer, and a convex mirror in it depicts the artist and a priest. A large, red bed is on the right of the two main figures, one with a hand on her belly. That figure is not actually pregnant, and wears a long, green dress while holding hands with a man in a fur-trimmed coat. For ten points, name this Jan van Eyck painting depicting a marriage.
ANSWER: The **Arnolfini Wedding** (Accept **Marriage of** Giovanni **Arnolfini**, The **Arnolfini Double Portrait**, or anything else that suggests a marriage between Giovanni Arnolfini and his wife)
<KT>

12. One of this king's generals, Marshall Turenne, was defeated in the Battle of the Dunes, and his minister Jean-Baptiste Colbert welcomed Venetian glass in his country. This ruler settled his conflict with William III of Orange and the League of Augsburg in the Treaty of Ryswick, and his Edict of (*) Fontainbleau nullified the Edict of Nantes. This ruler failed in his attempt to place Philip V on the throne of Spain in the War of the Spanish Succession, and he famously claimed, "I am the state." For ten points, name this French king who moved his palace to Versailles and was called the "Sun King".
ANSWER: **Louis XIV** of France (prompt on "Louis"; accept "**Sun King**" before mentioned)
<KT>

13. The magnetic moment of a charged particle is equal to this quantity times the *g*-factor times charge divided by two times the mass. Delta baryons have a value of 1.5 for this quantity, and, like other particles with half-integer values of this quantity, obey Fermi-Dirac statistics, whereas those with integer values obey (*) Bose-Einstein statistics. The Pauli Exclusion Principle states that pairs of electrons in the same orbital sub-shell must have opposite values of this quantity. For ten points, identify this quantum number, the angular momentum of a sub-atomic particle.
ANSWER: **spin** (prompt on **angular momentum**)
<MS>

14. This thinker examined the use of analogy using the grammatically similar sentences "A has a gold tooth" and "A has a toothache." This thinker was inspired by the way traffic courts in Paris model car accidents with toy cars to propose his "picture theory," which was included in work that begins "The world is all that is the case." This author of the (*) *Blue* and *Brown Books* argued that "What we cannot speak of we must pass over in silence" and refuted the possibility of a private language using the example of a beetle in a box. For ten points, name this Austrian philosopher whose works include *Philosophical Investigations* and *Tractatus Logico-Philosophicus*.
ANSWER: Ludwig **Wittgenstein**
<HX>

15. This poet wrote that "all I had achieved was carried off on" "The Golden Boat," which he included in his collection *Sonar Tori*. He wrote about Bimala's marriage to Nikhil and subsequent affair with Sandip in his novel *The Home and the World*. He was the first non-European Nobel Prize recipient, and he wrote *Jana Gana Mana* and *Amar Shona Bangla*, the (*) Indian and Bangladeshi national anthems. This man's most famous poetry collection was introduced to the West with an introduction by W.B. Yeats. For ten points, name this Indian poet of "Song Offerings" in the *Gitanjali.*
ANSWER: Rabindranath **Tagore**
<MukS>

16. The islands of Saba and Bonaire are a part of this country, and its highest point, Vaalserberg, lies in the Ardennes in the south. The mouths of the Meuse and the Scheldt lie in this country, and its cities include Tilburg and Utrecht. This country's area has steadily increased over the years due to use of polders in land reclamation. This country is home to the world's largest port, (*) Rotterdam, which lies on the mouth of the Rhine. This country lies mostly below sea level and is home to the Europol and the International Court of Justice, both of which are located in The Hague. This country borders the North Sea to the north and Germany to the east, and along with Belgium and Luxembourg, this country forms the Low Countries. For ten points, identify this country with capital at Amsterdam.
ANSWER: the **Netherlands** (or **Holland**)
<JD>

17. According to legend, one of these objects named Heaven's Will was owned by the Vietnamese king Le Loi, and another one named Joyeuse was owned by a mythological version of Charlemagne. Roland owned one named Durendal, and Odin broke one belonging to Sigmund when he tried to attack him. That object, Gram, was later used by (*) Sigurd to kill the dragon Fafnir, and Beowulf owned one of these that proved to be ineffective against Grendel's Mother. Besides one named Hrunting, an item of this type was given to the Lady of the Lake and pulled out of a stone. For ten points, name these weapons, a famous example of which is King Arthur's Excalibur.
ANSWER: **sword**s
<BZ>

18. In one of this author's works, a young landowner named Dimitry Sanin falls in love while visiting Frankfurt, while another of his works includes the characters Fedya, Kostya, and Pavlusha. This author of *Torrents of Spring* included *Bezhin Lea* in his collection *Sportsman's Sketches*. In his most famous work, (*) Anna Odinstova confesses her love for the protagonist before kissing him on his deathbed, and the protagonist fights with Pavel after flirting with Fenechka earlier in the work. For ten points, name this author who wrote about Arkady Kirsanov and his nihilist friend Bazarov in *Fathers and Sons*.
ANSWER: Ivan Sergeyevich **Turgenev**
<KT>

19. The synaptonemal complex disassembles during the diplotene stage of this process, and its pachytene stage sees the formation of chiasmata. Kinetochore microtubules help in separating homologous chromosomes and in pulling them towards opposite poles of the cell during this process. This process sometimes results in the formation of an (*) oocyte and three polar bodies, and one cycle of this process can produce four sperm. This process produces haploid gametes each with half the genetic content of the parental cell. For ten points, name process required for sexual reproduction which is often contrasted with mitosis.
ANSWER: **meiosis** (accept "**prophase**" until "Kinetochore")
<KT>

20. Thomas McDougald was assigned to obtain extra provisions prior to this conflict, while the Battle of the Rosebud prevented General Crook's troops from fighting at this battle. Also known as the Battle of the Greasy Grass, American troops were nearly wiped out at Reno Hill during this conflict until Frederick Benteen's reinforcements arrived. Controversial accounts of this battle were given by Curley and Chief Gall, while (*) Buffalo Calf Road Woman is credited for striking a fatal blow to the American commander, whose plan to divide his army was futile against a larger group led by Sitting Bull. For ten points, identify this 1876 battle near its namesake river in which a group of Plains Indians defeated the US Army led by George Armstrong Custer.
ANSWER: Battle of the **Little Bighorn** (accept Battle of the **Greasy Grass** before read; prompt on "Custer's Last Stand")
<EnzeC>

End of regulation, only proceed if tied

21. This man's *Muzik zu einem Ritterballet* was passed off as the work of his patron, and he also wrote a set of piano variations on a waltz by Anton Diabelli. One of this composer's students, Carl Czerny, gave the Vienna premiere of his "Emperor" piano concerto, and he renamed his third symphony, which was originally dedicated to (*) Napoleon, *Sinfonia Eroica*. This composer's piano sonata subtitled "quasi una fantasia" is commonly known as the *Moonlight Sonata*, and he quoted a Friedrich Schiller poem in his final symphony. For ten points, name this German composer who included the fate motif in his Symphony No. 5 and "Ode to Joy" in his Symphony No. 9.
ANSWER: Ludwig van **Beethoven**
<HX>

22. After the August Revolution, this man became Chairman of the Provisional Government. As a chef in France, he approached U.S. President Woodrow Wilson at the Versailles Peace Conference, asking for help to remove the French from his home country, but was rejected. In 1954, his generals won a 54-day siege on the stronghold of (*) Dien Bien Phu, and he led the Viet Minh Indepedence Movement from 1941 onwards. His namesake trail was used by the Vietcong to launch the Tet Offensive. For ten points, name this Vietnamese Communist revolutionary leader and founder of North Vietnam.
ANSWER: **Ho Chi Minh** (or **Nguyen Sinh Cung**; or **Nguyen Ai Quoc**)
<LC>

BONUSES

1. Bonus: The protagonist of this work learns that he has slept through the Revolutionary War! For ten points each:
[10] Identify this short story in which the title character sees some men playing nine-pins up in the Catskills and falls asleep for twenty years. When he wakes up, he finds out that has wife has died and his children have grown up.
ANSWER: "**Rip Van Winkle**"
[10] "Rip Van Winkle" was included in this collection along with stories like "The Spectre Bridegroom" and "The Legend of Sleepy Hollow." It was published under the pseudonym Geoffrey Crayon.
ANSWER: *The **Sketch Book** of Geoffrey Crayon, Gent.*
[10] This author of *The Sketch Book* attributed many of its stories to the fictional Dutch historian Diedrich Knickerbocker.
ANSWER: Washington **Irving**
<MS>

2. Bonus: This religion emphasizes the concepts of *samsara* and *nirvana*. For ten points each:
[10] Name this religion commonly practiced in Asia, founded by Siddhartha Gautama.
ANSWER: **Buddhism**
[10] This form of Buddhism can be translated to mean the "Great Vehicle" and it is commonly contrasted with its more conservative counterpart, Theravada.
ANSWER: **Mahayana** Buddhism
[10] Mahayana Buddhism originally meant "the path to becoming" one of these beings, who achieve enlightenment and help others do the same.
ANSWER: *bodhisattvas*
<MukS>

3. Bonus: They contain grana, which are stacks of thylakoids. For ten points each:
[10] Name this organelle found in plant cells which synthesizes ATP from light energy in photosynthesis.
ANSWER: **chloroplast**s
[10] This biochemical cycle occurs in chloroplasts with the ultimate aim of creating glucose from carbon dioxide, ATP, NADPH, and water.
ANSWER: **Calvin**-Benson-Bassham Cycle (accept **reductive pentose phosphate** cycle or **C3** cycle or **CBB** cycle or **dark** reactions or **light-independent** reactions; prompt on **photosynthesis**)
[10] This enzyme converts carbon dioxide and ribulose 1,5-biphosphate into two molecules of 3-phosphoglycerate in the carbon fixation phase of the Calvin cycle. It is probably the most abundant protein on earth.
ANSWER: **RuBisCO** (amusingly accept **ribulose 1,5-biphosphate carboxylase oxygenase**)
<KT>

4. Bonus: Mount Massive is, ironically, only the second tallest peak in this mountain range. For ten points each:
[10] Name this mountain range that stretches from western Canada in the north to New Mexico in the south and has its highest point at Mount Elbert.
ANSWER: **Rocky** Mountains (or **Rockies**)
[10] This other mountain range lies west of the Sierra Nevada and stretches from Washington to northern California along the Pacific coast. Its peaks include Mount Rainier and Mount St. Helens.
ANSWER: **Cascade** Range (or **Cascades**; accept "Mountains" instead of "Range")
[10] This other subrange of the Rockies runs along the border of Montana and Idaho. It is named after Montana's state flower.
ANSWER: **Bitterroot** Range/Mountains
<JD>

5. Bonus: He instituted an "Action Program" that saw greater freedom of speech and of the press. For ten points each:
[10] Name this man who tried to institute "socialism with a human face" in his home country after succeeding Antonin Novotny.
ANSWER: Alexander **Dubček** [pronounced doob-check]
[10] Alexander Dubček led this event, named after a certain European capital, that saw a period of liberalization and reform. Jan Palach committed suicide to protest its ending, and the Two Thousand Words were written after it.
ANSWER: **Prague Spring** [accept **Pražské jar**o]
[10] The Prague Spring took place in this no longer extant country, which broke apart following the Velvet Divorce. Its former leader Vaclav Havel died in December of 2011.
ANSWER: **Czechoslovakia** [accept **Československo**]
<BZ>

6. Bonus: An arched Maidenhead bridge standing in the Thames River can be seen in the bottom left of this work. For ten points each:
[10] Name this oil painting in which a yellow fog clouds around a train running across a bridge.
ANSWER: ***Rain, Steam, and Speed*** – *The Great Western Railway*
[10] *Rain, Steam, and Speed* is a work of this British painter who depicted drowning bodies thrown off the title boat in *Slave Ship*.
ANSWER: Joseph Mallord William **Turner**
[10] Turner also painted this work, in which the title warship is shown to be "tugged to her last berth to be broken up" in the left. A golden sun can be seen in the horizon, and a pier is spotted on the right-hand side.
ANSWER: *The **Fighting Temeraire***
<KT>

7. Bonus: Police officer Deriek Crouse was killed here in 2011. For ten points each:
[10] Identify this university, which saw an April 16, 2007 shooting rampage kill 32 people.
ANSWER: **Virginia** Poly**tech**nic University
[10] The 2007 Virginia Tech shooting was carried out by this South Korean student, who had been diagnosed with a variety of mental illnesses but did not receive treatment.
ANSWER: Seung-Hui **Cho**
[10] In 2009, psychiatrist Nidal Malik Hasan killed 13 people at this Army base located near Killeen, Texas. It is the most populous US military outpost in the world.
ANSWER: Fort **Hood**
<DA>

8. Bonus: In a 1974 address, Richard Feynman ("fine-men") used the degree of error present in this experiment as an example of how humans fool themselves. For ten points each:
[10] Identify this experiment carried out by Robert Millikan and Harvey Fletcher in which an atomizer sprayed a fine mist of the namesake compound into an X-ray chamber between two charged plates.
ANSWER: **oil drop** experiment
[10] The goal of the experiment was to determine this elementary particle's charge, which has an accepted value of -1.6×10^{-19} C (read as "negative-one-point-six-times-ten-to-the-negative-nineteenth-coulombs).
ANSWER: **electron**
[10] The experiment also helped show that charge has this characteristic, meaning that all charges in the universe are integral multiples of the charge of an electron.
ANSWER: **quantized** (accept word forms)
<EnzeC>

9. Bonus: The British led a famous burning of this city during the War of 1812. For ten points each:
[10] Identify this city on the Potomac that is home to the Capitol building and the White House..
ANSWER: **Washington, D.C.**
[10] This Secretary of the Treasury, along with Madison and Jefferson, decided to move the capital to Washington D.C. after the Compromise of 1790 in which Southerners agreed to federal assumption of state debts.
ANSWER: Alexander **Hamilton**
[10] In addition to redesigning Federal Hall in 1788, this French-born American architect was commissioned by Washington to design the layout of the streets of Washington, D.C.
ANSWER: Pierre Charles **L'Enfant**
<EnzeC>

10. Bonus: Identify some authors who served time in prison, for ten points each:
[10] This American short story author allegedly got his pen name from a prison guard. He wrote such stories as "The Gift of the Magi," "The Ransom of Red Chief," and "The Cop and the Anthem."
ANSWER: O. **Henry** (or William Sydney **Porter**)
[10] This man wrote *The Enormous Room*, a novel based on his experiences in a French prison during World War I. His unconventional poetry is distinguished by its general lack of capitalization and punctuation.
ANSWER: edward estlin **cummings**
[10] The line "stone walls do not a prison make, nor iron bars a cage" appears in this Englishman's *To Althea, from Prison*.
ANSWER: Richard **Lovelace**
<MS>

11. Bonus: Q-switching allows them to produce beams with higher peak frequency. For ten points each:
[10] Identify these devices which stimulate photon emissions that produce a beam of very coherent light.
ANSWER: **laser**s
[10] Most lasers operate by making the gain medium reach this state, in which there are more excited particles than not.
ANSWER: **population inversion**
[10] This man showed that the probability of an excited atom causing stimulated emission was equal to that of a normal atom absorbing a photon in one of his Annus Mirabilis papers, written while working at a Swiss patent office.
ANSWER: Albert **Einstein**
<MS>

12. Bonus: It is the locus of all points such that the sum of their distances to the foci is constant. For ten points each:
[10] Identify this type of conic section whose equation can be expressed as *x*-squared over *a*-squared plus *y*-squared over *b*-squared equals one. Circles are special cases of these curves.
ANSWER: **ellipse**
[10] The value of this parameter is between zero and one for an ellipse. Circles have a value of zero for this quantity, which roughly measures how distorted a conic is.
ANSWER: **eccentricity**
[10] This conic section has eccentricity greater than one and can be modeled by the function $f(x)=1/x$.
ANSWER: **hyperbola**
<BJ>

13. Bonus: One participant, nicknamed "John Wayne," forced Prisoner No. 416 into solitary confinement as punishment for refusing to eat his sausages. For ten points each:
[10] Identify this 1971 experiment conducted in Jordan Hall of a certain Californian university, in which participants were assigned to role-play as either "guards" or "inmates."
ANSWER: **Stanford Prison** Experiment (or **Zimbardo** Prison Experiment, DO NOT REVEAL ZIMBARDO if team doesn't say it)
[10] This psychologist started the Shyness Clinic and wrote *The Lucifer Effect* in addition to conducting the Stanford Prison Experiment.
ANSWER: Philip **Zimbardo**
[10] This earlier experiment conducted by Albert Bandura proved that aggression is a learned behavior by showing that children attacked the namesake toy when shown films where adults attacked the toy as well.
ANSWER: **Bobo doll** experiment
<JD>

14. Bonus: It forms part of its author's "Rural Trilogy" with *Yerma* and *The House of Bernarda Alba*. For ten points each:
[10] Identify this play in which it turns out Leonardo Felix had been previously romantically involved with the Bride and killed the Groom's father.
ANSWER: *__Blood Wedding__* (or *__Bodas de Sangre__*)
[10] *Blood Wedding* is a work of this author who was shot by death squads during the Spanish Civil War. Pablo Neruda wrote an Ode to him.
ANSWER: Federico del Sagrado Corazón de Jesús García **Lorca**
[10] In *Blood Wedding*, one of these animals features prominently, being sung about in a lullaby and stolen by Leonardo to make his getaway. Yukio Mishima wrote about riding the *Runaway* types of these animals in his *Sea of Fertility*.
ANSWER: **horse**s
<MS>

15. Bonus: He was the first Roman Emperor to convert to Christianity. For ten points each:
[10] Name this emperor who moved his empire to Byzantium, which he would later rename after himself.
ANSWER: **Constantine I** (accept **Constantine the Great**, prompt on Constantine)
[10] Constantine the Great issued this agreement which expanded religious toleration and legalized the practice of Christianity.
ANSWER: **Edict of Milan**
[10] Constantine the Great reportedly saw a letter in the sky which read, "In this sign you will conquer" prior to this battle, in which he defeated the army of Maxentius.
ANSWER: Battle of **Milvian Bridge** (accept Battle of **Mulvian Bridge** or **Pons Milvius**)
<KT>

16. Bonus: This god owns the iron gloves Jarngreipr and the magic belt Megingjoro. For ten points each:
[10] Name this wielder of the hammer Mjollnir, the Norse god of thunder.
ANSWER: **Thor**
[10] This home of the Aesir has an incomplete wall due to the interference of Loki and Thor. It is supported by the branches of Yggdrasil and is also where Valhalla is located.
ANSWER: **Asgard**
[10] In the form of a mare, Loki mated with the horse Svadilfari to produce this eight-legged steed of Odin. He has runes carved on his teeth and enables Odin to travel to and from Hel.
ANSWER: **Sleipnir**
<BZ>

17. Bonus: Don José kills the title gypsy after she falls for the bullfighter Escamillo. For ten points each:
[10] Name this opera which includes the "Toreador Song," as well as a "Habanera" which proclaims that "love is a rebellious bird."
ANSWER: *__Carmen__*
[10] This French composer of *Carmen* also wrote two *L'Arlésienne* suites in addition to *Children's Games* and *The Fair Maid of Perth*.
ANSWER: Georges **Bizet**
[10] This Bizet opera includes the duet "Au fond du temple saint" and ends with the death of Zurga, the leader of the title group.
ANSWER: *The __Pearl Fishers__* (also accept *Les __pêcheurs de perles__*)
<HX>

18. Bonus:"That's one small step for man, one giant leap for mankind." For ten points each:
[10] Name the famous astronaut who said these iconic words when he and "Buzz" Aldrin became the first men to walk on the moon during the Apollo 11 mission.
ANSWER: Neil **Armstrong**
[10] Although the United States was the first nation to land humans on Earth's moon, the Soviet Union got a head start in the Space Age in 1957 when it launched this first artificial satellite to be put in Earth's orbit.
ANSWER: **Sputnik** 1
[10] The Soviet Union also put the first man into outer space when this cosmonaut's Vostok spacecraft completed an orbit of Earth in 1961.
ANSWER: Yuri **Gagarin**
<LC>

19. Bonus: Name some notable memes, for ten points each:
[10] This three word phrase originated from a Lonely Island song in which a man tells his interviewer about how he "bomb[s] the Russians" and "crash[es] into the sun" in the title manner.
ANSWER: **Like a Boss**
[10] This meme was popularized in an ad made by the namesake taxidermist who went viral on YouTube in September 2011.
ANSWER: **Nope! Chuck Testa** (accept either)
[10] This catchphrase originated from the movie *300* when Leonidas declined peace with the Persians and promptly kicked the Persian messenger into a well. It is said immediately after "this is madness!"
ANSWER: No, **This... Is... SPARTA!**
<EnzeC>

20. Bonus: They typically have wind speeds greater than 74 miles per hour and develop an "eye" at their center. For ten points each:
[10] Identify this weather phenomenon, examples of which include Andrew and Katrina.
ANSWER: **hurricane**s (accept **tropical cyclone** and **typhoon**; do not accept "tornado")
[10] Using this scale, hurricanes are separated into five categories based on the intensities of their sustained winds.
ANSWER: **Saffir-Simpson** Hurricane [Wind] Scale
[10] This other scale, devised by an Irish Navy Officer, relates wind speed to observed conditions and ranges from 0-12.
ANSWER: **Beaufort** Wind Force Scale
<EnzeC>

21. Bonus: One character in this work does not finish his *The Key to All Mythologies*. For ten points each:
[10] Name this work in which Dorothea Brooke marries Will Ladislaw after Edward Casaubon's death.
ANSWER: *Middlemarch*: *A Study of Provincial Life*
[10] *Middlemarch* was written by this English feminine novelist that also wrote *Daniel Deronda* and *Silas Marner*.
ANSWER: George **Eliot** (Accept Mary Ann **Evans**)
[10] This Eliot work sees Stephen Guest and Philip Wakem involved in the protagonist's love triangle, and details the lives of Maggie and Tom Tulliver.
ANSWER: *The **Mill on the Floss***
<KT>

22. Bonus: The AVL type of these are self-balancing, and each parent node of a binary one has two child nodes. For ten points each:
[10] Name this data structure commonly used in search algorithms. Its topmost node is called the "root node," while its terminal nodes are called "leaf nodes."
ANSWER: **tree**s
[10] This colorfully named, self-balancing binary search tree was invented by Rudolf Bayer. It has a worst-case running time of O (log *n*) ("big O log n"), and its leaves are indicated by null pointers.
ANSWER: **red-black** trees (accept **black-red** trees or **symmetric** binary **B**-trees)
[10] These other data structures are special cases of trees in which the child nodes are either all less than or all greater than their parents. They can come in Leftist or Fibonacci types, and are sometimes contrasted with stacks.
ANSWER: **heap**s
<HX>