Ladue Invitational Spring Tournament VI

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ROUND 12 - TOSSUPS

1. The name of this concept originates from the Latin word *nous*, a term created by early thinkers to define it. Raymond Cattell proposed the Gf and Gc types of this concept to discern between its "fluid" and "crystallized" forms. Howard Gardner divided this concept into different modalities, opposing the theory of one general ability, or g-factor. Stanford University improved upon an earlier (*) test of this quality, leading to the current Stanford-Binet scale for measuring it in children. John Searle proposed that computers may exhibit the "strong artificial" type of this concept, which Stephen Hawking said could end mankind. For ten points, identify this cognitive ability whose quotient is measured in IQ tests.

ANSWER: <u>intelligence</u> [accept <u>IQ</u> or <u>Intelligence Quotient</u> before mentioned] <AG>

2. In the beginning scenes of this novel, one character defies his father by standing below his window through the night. The protagonist has a dream in which he finds his lover's songbird dead in a cage, and the son he later has with that lover steals a raft and sails away. A ferryman in this novel, (*) Vasudeva, instructs the title character to "listen to the river" after he does not find satisfaction with the wandering Samanas and parts ways with his best friend, Govinda. For ten points, name this novel that follows a man's journey to enlightenment by Herman Hesse.

ANSWER: Siddhartha

<RP>

3. A main advocate for this event kissed a wild salmon on his last day of campaigning for it, and that man burned a giant check to "show what happens to our cash every week" as a result of this event not occurring. One campaign pushing for this event said it would give the National Health Service 350 million (*) pounds every week, and Nicola Sturgeon suggested a vote for the independence of her country as a result of this event. This event caused Marine Le Pen to insist for a similar referendum in France, saying that nation "had a thousand more reasons to leave". For ten points, name this June 23, 2016 referendum which voted that a certain country should leave the European Union.

ANSWER: \underline{Brexit} referendum [accept $\underline{Britain leaving}$ the \underline{EU} and other equivalents, anti-prompt on $\underline{England leaving}$ the \underline{EU}]

<AG>

4. In a followup piece to one of this composer's works, the only directions ask for the musician to "perform a disciplined action". Merce Cunningham choreographed a ballet by this man that implemented the "gamut technique", and this composer used the *I Ching* as inspiration for his *Music of Changes*. Objects such as (*) screws, bolts, and clothespins are placed on a keyboard in this man's invention of the "prepared piano", and one of his pieces begins with the performer closing the lid of a piano. For ten points, name this American minimalist composer, whose most famous piece consists of four minutes and thirty three seconds of silence.

ANSWER: John Milton Cage Jr.

 $\langle RP \rangle$

5. At a party in this novel, Johann Strauss conducts an orchestra comprised only of "world celebrities". Bosoi allows the main character of this novel to live in the vacated Apartment No. 50, which one of the title characters flies up to on Walpurgis Night after applying Azazello's magic cream. After a show at the Variety Theater, the cat (*) Behemoth aids in transporting Styopa, Berlioz's roommate, to Yalta. When one of the two title characters tries to burn the writings of Yeshua he is told that "manuscripts don't burn". This novel alternates between the settings of Pontius Pilate and Professor Woland. For ten points, name this novel in which a disguised Satan visits Moscow, by Mikhail Bulgakov.

ANSWER: The Master and Margarita

<RP>

6. The reason why thalidomide caused birth defects can be explained because thalidomide exhibits this phenomenon, and Friedrich Wohler first discovered this property when experimenting with silver cyanate. Branching hydrocarbons often exhibit this property, and molecules that exhibit one form of this property are labelled as (*) "cis" or "trans"; that form is the "stereo" type of this phenomenon. Two molecules that exhibit the optical form of this phenomenon are analogous to left and right hands. For ten points, name this property of molecules which have the same molecular formula but different chemical structures.

ANSWER: <u>isomerism</u> [accept <u>isomer</u>s, accept <u>enantiomer</u> before Wohler] <MS>

- 7. After Lajos Kossuth gave a speech during the Hungarian revolution of 1848, this man was overthrown by a mob. This man arranged for the marriage of Napoleon and Archduchess Marie Louise, and he disbanded the Burschenschaft after the murder of the playwright August von Kotzebue. Karl von Hardenberg and Viscount Castlereagh were among ministers present at an (*) assembly led by this man, in which he denounced the Holy Alliance proposed by Alexander I. Along with representatives such as Charles Talleyrand, this statesman arranged the Concert of Europe. For ten points, name this Austrian statesman who issued the Carlsbad decrees and chaired the Congress of Vienna. ANSWER: Klemens von Metternich
- 8. One of this mythological figure's sisters was called the "nurse-mother", since she helped raise his son despite being married to his enemy. During a festival devoted to this god at Abydos, his body was supposedly carried on the Neshmet bark. This god's father, Geb, taught his daughter a spell which briefly revived this man, who is often depicted with a (*) crook and flail. That daughter of Geb was this god's wife, who later became pregnant with Horus. This god was cut up into fourteen pieces by Set, but thirteen of those pieces were recovered by his wife, Isis. For ten points, identify this Egyptian god of the underworld.

ANSWER: Osiris

<CL>

9. An artist from this country decorated a sobbing African lady with map pins and glitter in his work *No Woman, No Cry.* That artist, who uses elephant dung in many of his pieces, is Chris Ofili. Other artists born in this nation include a man famous for a work titled after Diego Velazquez nicknamed "The Screaming Pope" as well as a graffiti artist who created a documentary on Thierry Guetta titled (*) "Exit Through the Gift Shop". An artist from this country made a platinum skull covered in diamonds, while another of his works is a shark preserved in formaldehyde. Francis Bacon, Banksy, and Damien Hirst are all from, for ten points, what country whose Big Ben and Westminster Abbey are located in London?

ANSWER: England [accept Great Britain or United Kingdom]

<RP>

10. The Rau River arises on this mountain's slopes, and the Mweka trail can be used to descend from its summit. Stella Point is located on this mountain, whose ancient lava flows created the Great Barranco Wall and the Western Breach. The Furtwangler and Rebmann glaciers are both receding ice masses atop this mountain, which was first scaled by Ludwig Purtscheller and Hans Meyer. This (*) dormant volcano has the three volcanic cones Kibo, Shira, and Mawenzi, and its summit is known as Uhuru peak. For ten points, identify this mountain located near the border of Tanzania and Kenya, the highest in Africa.

ANSWER: Mount Kilimanjaro

<AG>

HALFTIME

11. Along with its Tibetan and Karluk allies, this dynasty suppressed expansion of the Tang dynasty at the Battle of Talas. This caliphate, which built the Al-Ukhaider fortress in Karbala, experienced internal conflict and the rapid succession of four caliphs in nine years during the Anarchy at Samarra. This dynasty rose to prominence after its army defeated Marwan II at the Battle of the (*) Zab, and it saw advancements in algebra by al-Khwarizmi and optics by Ibn al-Haytham. This caliphate had a large influence in Sunni Islam until forces led by Hulagu Khan destroyed its capital of Baghdad. For ten points, name this successor of the Umayyad caliphate, centered at Baghdad.

ANSWER: Abbasid Caliphate [or Abbasid Dynasty]

12. The oldest one of these places that still stands in the United States is located in Newport, Rhode Island. These places are run by a board of directors composed of lay people, and hire for jobs such as the chazzan. They receive funding in annual dues paid by their members, and these buildings contain a ner tamid, or (*) "eternal flame." These places also contain an elevated platform known as a bimah, and the Aron Kodesh in these places is where Torah scrolls are located. For ten points, name these Jewish houses of prayer and Torah study.

ANSWER: **Synagogue** [accept "**Shul**" or "**Beit Kinesset**", prompt on "temple"] <JC>

13. Hadamard names a problem about finding the maximum value for one of these, and the Wronskian one of these can determine if a set of functions is linearly independent. One of these is used to calculate the cross product of two vectors, and (*) Cramer's Rule uses these to calculate solutions to systems of linear equations. The Rule of Sarrus can only be used to calculate a specific type of these, while expansion by minors is another algorithm to calculate this value for a matrix. For ten points, name this value, which is equal to ad-bc for a 2 by 2 matrix.

ANSWER: determinant

<MS>

<GM>

14. The creator of this language also worked on an earlier document system at CERN. That system, known ENQUIRE, stored information in units known as cards, and was developed by Tim Berners-Lee. This language introduced canvas elements in its fifth version in an attempt to supplant an (*) Adobe product. Files in this language, which is developed by the W3C, begin with a DOCTYPE declaration and contain elements delineated by tags. This language is often used in conjunction with CSS and Javascript. For ten points, name this standard markup language used for the creation of web pages.

ANSWER: $\underline{\mathbf{H}}$ yper $\underline{\mathbf{T}}$ ext $\underline{\mathbf{M}}$ arkup $\underline{\mathbf{L}}$ anguage [$\underline{\mathbf{HTML}}$] <PA>

15. In a famous political cartoon from Judge Magazine, this man wears a red cape as he stands on the Bible with an oversized cross in his hand. In an article for the New York Times, this politician declared that he would "rather speak on religion than on politics" after giving "The Prince of Peace", which was among the speeches he gave while on the Chautauqua Circuit. This man represented the (*) prosecution against Clarence Darrow in the Scopes Monkey Trial, and advocated for his belief of "free silver" in his most famous speech. For ten points, name this three-time Democratic presidential nominee who denounced the gold standard in the "Cross of Gold" speech.

ANSWER: William Jennings **Bryan**

 $\langle RP \rangle$

16. A work by this author begins with a Euripides quote on the meaning of "True Liberty." That poem describes the uses and harms of the Licensing Order of 1643, and notes that "he who destroys a good book, kills reason itself." In another poem, this author asks "Doth God exact day-labor, light denied?" in a poem about his title (*) condition that begins, "When I consider how my light is spent". This author of *Areopagitica* and *On His Blindness* wrote another poem meant to "justify God's ways to man," and that poem describes a character who says that it is "Better to reign in Hell, than to serve in heaven." For ten points, name this poet who described Adam and Eve's expulsion from heaven in *Paradise Lost*. ANSWER: John Milton

 $\langle MS \rangle$

17. A Symbolist composer from this country wrote atonal piano sonatas influenced by his synesthesia, and that man planned to bring about the end of the world with a performance of his work *Mysterium*. The Rubinstein brothers founded rival conservatories in this country's two largest cities, and this country was the home of the composer of *March Slav*, who used a 5/4 (*) limping waltz in his *Symphonie Pathetique*. That composer from this country used "La Marseille" to represent Napoleon's invasion in one work, and composed a ballet that includes the "Dance of the Sugar Plum Fairy". For ten points, name this country that was home to Alexander Scriabin and the composer of the *1812 Overture* and *The Nutcracker*, Pyotr Ilyich Tchaikovsky.

ANSWER: Russia

 $\langle ES+RP \rangle$

18. Organisms of this phylum may exist as planulae in their larval stages, and they often use statocysts to sense balance. *Chironex fleckeri* is one of the most dangerous members of this diploblastic phylum, whose organisms can have spirocysts, ptychocysts, or (*) nematocysts. Organisms of this phylum have two layers of epithelium that are only one cell thick. Members of this phylum have bodies that are made of mesoglea, and its class Anthozoa is sessile. Organisms from this phylum typically have medusa and polyp stages in their life cycle. For ten points, identify this radially and bilaterally symmetrical phylum, named for its stinging cells, that includes organisms such as corals and jellyfish.

ANSWER: **Cnidaria** [accept **Cnidarian**s]

<LP+RP>

19. A poem by this author asks several questions to Ramon Fernandez and begins, "She sang beyond the genius of the sea." A collection that contains his "The Idea of Order at Key West" also includes a poem that describes a "gray and bare" object "upon a hill" in Tennessee. This poet who included "Anecdote of the (*) Jar" in his collection *Harmonium*, asks "O thin men of Haddam, / Why do you imagine golden birds?" in a poem that claims the eye of one of the title animals was the "only moving thing" among "twenty snowy mountains". For ten points, name this poet who wrote "Thirteen Ways of Looking at a Blackbird".

ANSWER: Wallace Stevens

 $\langle RP \rangle$

20.One of this man's prime ministers was killed in the May 15 incident shortly after an attempted assassination involving a grenade thrown at his carriage. This leader discovered several species of hydrozoa while studying marine biology, and he was pictured with Douglas MacArthur shortly after he renounced his divinity in the Declaration of Humanity. This man announced his country's surrender in the (*) Jewel Voice Broadcast after the bombing of Nagasaki, and his country used the Mukden Incident to invade Manchuria during his rule, beginning a war with China. For ten points, name this man who was relied by Hideki Tojo while he was Japan's emperor during World War II.

ANSWER: Emperor <u>Hirohito</u> [or Emperor <u>Showa</u>]

<ES>

End of regulation, only proceed if tied

21. This man wrote the song "I'd Have You Anytime" with George Harrison for the latter's album All Things Must Pass. In one of his songs, the narrator asks his mother to wipe the blood from his face as he cannot see through it anymore. In another, a joker says to the thief that there is too much confusion and he "can't get no relief". Those songs are "Knockin' On Heaven's Door" and (*) "All Along the Watchtower," which was covered famously by Jimi Hendrix. For ten points, name this artist, born Robert Zimmerman, a Nobel Laureate who wrote songs as "Blowin' in the Wind" and "Like a Rolling Stone."

ANSWER: Bob Dylan

 $\langle SP \rangle$

22. SQUIDs are devices that can measure the strength of this entity, and the Zeeman effect describes how spectral lines are split due to this entity. Because the force caused by it is perpendicular to the motion of a charged particle, this entity can do no work on them, and that force caused by this is known as the Lorentz force. The (*) Biot-Savart law describes one of these entities that is created by an electric current, and Gauss' law states that the flux of this entity through a surface is zero. For ten points, name this vector field denoted by the capital letter B, the counterpart of the electric field.

ANSWER: magnetic field [accept B-field or H-field]

<MS>

BONUSES

1. Bonus: Every January 25th, a supper is held in honor of this man, and many of his poems are read. For ten points each:

[10] Name this Scottish poet of works like "To a Mouse" and "To a Louse". He described a dance of witches, warlocks, and the Devil in a haunted church in his "Tam o' Shanter".

ANSWER: Robert Burns

[10] This poem by Robert Burns describes how his love is like the title object, "that's newly sprung in June."

ANSWER: A Red, Red, Rose [accept "My Love is Like a Red, Red, Rose"]

[10] This other Burns poem is frequently sung on New Year's Eve. It asks "should aud acquaintance be forgot/and never brought to mind?"

ANSWER: "Auld Lang Syne"

<MS>

2. Bonus: This comedian started selling hats saying "Make Donald Drumpf Again". For ten points each:

[10] Name this English comedian, the host of Last Week Tonight.

ANSWER: John William Oliver

[10] John Oliver previously served as a correspondent on The Daily Show Comedy, which is now hosted by this South African comedian, who replaced Jon Stewart in August 2015.

ANSWER: Trevor Noah

[10] This other former correspondent on *The Daily Show* hosted a show in which he pretended to be a conservative pundit on Comedy Central, before he left to replace David Letterman on the *Late Show*.

ANSWER: Stephen Tyrone Colbert

<AN>

3. Bonus: In the Warburg effect, cancer cells use this pathway for most of their energy needs. For ten points each:

[10] Name this pathway which breaks down a namesake six-carbon sugar into two molecules of pyruvic acid and produces two net molecules of ATP.

ANSWER: **glycolysis** [or **glycolytic** pathway]

[10] Before entering the Krebs cycle, the pyruvate molecules produced in glycolysis are then converted into this molecule via decarboxylation. This molecule then combines with oxaloacetate in the first step of the Krebs cycle.

ANSWER: acetyl-coA [or acetyl-Coenzyme A; do not accept or prompt on "Coenzyme A" or "CoA"]

[10] In eukaryotes, the products of glycolysis are transported into this organelle, whose matrix is the site of the Krebs cycle. The protein complex involved in oxidative phosphorylation is located in the inner membrane of this organelle.

ANSWER: mitochondria [or mitochondrion]

<BZ>

4. Bonus: This man became the leader of his party after the Siege of Alcazar. For ten points each:

[10] Name this leader of the Falange and generalissimo of the Nationalists who was succeeded by Juan Carlos I.

ANSWER: Francisco Franco y Bahamonde

[10] Franco lead Nationalists forces in the civil war of this European country, which he was the fascist dictator of from 1939-1975.

ANSWER: Kingdom of **Spain** [or Reino de España]

[10] The Comintern organized these military units of volunteers from various countries to assist the Popular Front in the Spanish Civil War. The Connolly Column and one named for Abraham Lincoln were two of these volunteer groups.

ANSWER: International Brigades [accept Brigadas Internacionales]

<GM+RP>

5. Bonus: This author's work *Cyclops* is the only surviving satyr play. For ten points each:

[10] Name this Greek tragedian who created *Alcestis*, as well a play in which Hector's son Astyanax is thrown from the walls of Troy, *The Trojan Women*.

ANSWER: Euripides

[10] In this play by Euripides, the title sorceress uses a poisoned robe to kill Glauce and Creon and also murders her own children to inflict as much pain as possible upon her husband.

ANSWER: Medea

[10] In addition to *Medea*, Euripides also wrote this tragedy in which Dionysus orders that Pentheus' corpse is reassembled after Agave and the Maenads rip apart his limbs.

ANSWER: The Bacchae

 $\langle RP \rangle$

6. Bonus: The appendix to this work describes the difference between the object-in-itself and the thing-in-itself, and that appendix is called *Critique of the Kantian Philosophy*. For 10 points each:

[10] Name this work which described human experiences due to the two title concepts. It also describes how there is no end to suffering and how all life is suffering.

ANSWER: The <u>World as Will and Representation</u> [accept The <u>World as Will and Idea</u>, The <u>World as Will and Presentation</u>, or Die <u>Welt als Wille und Vorstellung</u>, prompt on <u>WWR</u> or <u>WWV</u>]

[10] This German author of *The World as Will and Representation* showed his misogynistic side in an essay attacking females for being incapable of deep thought or mental maturity and requiring a master, *On Women*.

ANSWER: Arthur Schopenhauer

[10] In *The World as Will and Representation*, Schopenhauer described how this concept is a cause for suffering, which the Buddha also claims is the cause for human suffering, and must be eliminated in order to reach Nirvana.

ANSWER: **desire** [accept **craving** or other equivalents]

<MS>

7. Bonus: Name these modern artists who were born in the Netherlands. For ten points each:

[10] This artist rejected the use of diagonal lines in De Stijl artwork. His *Broadway Boogie Woogie* was inspired by the street grids of Manhattan.

ANSWER: Piet Mondrian

[10] A flock of birds appear to transform into a group of fish and two hands draw each other in woodcuts by this man, who was best known for his optical illusions.

ANSWER: Maurits Cornelius Escher

[10] This artist rejected the classification of Abstract Expressionism to describe his work. He is best known for his *Woman* series, a collection of six works attempting to showcase the power of the feminine.

ANSWER: Willem de Kooning

 $\langle RP \rangle$

8. Bonus: How much do you know about the New Deal? Let's find out, for ten points each:

[10] The New Deal was a series of reform programs instituted during the two terms of this 32nd president to alleviate the Great Depression.

ANSWER: Franklin Delano Roosevelt [accept FDR, prompt on "Roosevelt"]

[10] This bill from the New Deal aimed to raise the price of crops by paying farmers subsidies to kill excess livestock and leave a portion of their land unfarmed, which would prevent crop surplus. A namesake agency was created to manage it.

ANSWER: Agricultural Adjustment Act

[10] The Second New Deal featured this bill, which established the rights of workers to form labor unions and engage in collective bargaining. It is alternatively known as the National Labor Relations Act of 1935.

ANSWER: Wagner Act

 $\langle RP \rangle$

- 9. Bonus: The Kra Isthmus Canal is a proposal to connect this country's namesake Gulf and the Andaman Sea. For ten points each:
- [10] Name that country whose capital is Bangkok.

ANSWER: Kingdom of **Thailand**

[10] Northern Thailand's Isan province is the site of this plateau, which is separated from central Thailand by the Dong Phaya Yen, Phetchabun, and Sankamphaeng mountains. The Mekong river notably flows through this plateau.

ANSWER: Khorat plateau

[10] To the southwest of the Khorat plateau is the Gulf of Thailand, which is part of this larger sea that has been the source of conflict between China and its neighboring nations.

ANSWER: South China Sea

<AG+AN>

- 10. Bonus: Answer some questions about simple machines, for ten points each:
- [10] This type of simple machine is made by wrapping an inclined plane around a cylinder and was used in the transport of water in Ancient Egypt.

ANSWER: screw

[10] In screws and other simple machines, the ratio of input force compared to output force while taking into account friction has this name.

ANSWER: actual mechanical advantage [accept AMA, prompt on mechanical advantage]

[10] This man is famous for determining the ideal mechanical advantage for the lever. He also supposedly ran through the streets naked, shouting "Eureka!" after discovering the principle of buoyancy.

ANSWER: Archimedes

 $<\!\!\text{CL+MS}\!\!>$

- 11. Bonus: The prologue to this work includes a writer, a carpenter, and an old man who discuss each other's "grotesqueness". For ten points each:
- [10] Name this cycle of twenty-two stories centered on George Willard, named after a fictional midwestern town.

ANSWER: Winesburg, Ohio

[10] Winesburg, Ohio contains the story "The Strength of God" in which the reverend Curtis Hartman witnesses this character praying while naked. In "The Teacher", this character becomes attracted to George, who is her student.

ANSWER: Kate Swift (accept either underlined answer)

[10] Winesburg, Ohio was written by this American author.

ANSWER: Sherwood **Anderson**

 $\langle RP \rangle$

12. Bonus: The first half of this war ended with the signing of the Peace of Nicias. For ten points each:

[10] Name this 5th century BCE war, fought for almost thirty years, between Athens and Sparta.

ANSWER: Peloponnesian War

[10] This unfaithful Athenian general from the Peloponnesian War defected to Sparta, but after escaping his arrest, he defected back to Athens.

ANSWER: Alcibiades

[10] Alcibiades led an infamous expedition to this largest island of the Mediterranean Sea, but the campaign proved disastrous and was defeated by Gylippus.

ANSWER: Sicily

 $\langle RP \rangle$

13. Bonus: These people experienced spiritual enlightenment during the Era of Manifestations. For ten points each: [10] Identify this English religious group, once led by Mother Ann Lee, notable for worship dances and hymns such as "Simple Gifts".

ANSWER: Shakers

[10] The Shakers separated from this larger Christian denomination in England, formally known as the Religious Society of Friends. These people practice simple dress, nonviolence, and often "tremble before God."

ANSWER: Quakers

[10] The Quakers were founded by this English dissenter, who was targeted by authorities in England for his religious views.

ANSWER: George Fox

<AG>

14. Bonus: This man published *A New System of Chemical Philosophy*, in which he proposed that each element is made up of atoms. For 10 points each:

[10] Name this English chemist who pioneered atomic theory, forming many fundamental ideas about atoms and compounds.

ANSWER: John Dalton

[10] This law created by Dalton suggests that if two elements form several different compounds, the proportions of the mass of the second element which combine with 1 gram of the first element can be reduced to whole numbers.

ANSWER: law of multiple proportions

[10] Dalton summarized this other law in 1803 after studying mixtures of gases. This law can be used to derive the fact that the mole fraction of a component in a mixture of gases equals the value of the component over the entire mixture's value for it.

ANSWER: law of partial pressures

<AG>

15. Bonus: This work begins with "I was the shadow of the waxwing slain." For 10 points each:

[10] Name this work which consists of a 999 line poem by John Shade and an analysis of it by Charles Kinbote.

ANSWER: Pale Fire

[10] This novel by the author of *Pale Fire* discusses the sexual relationship between Humbert Humbert and the 12-year-old Dolores Haze. Dolores eventually escapes with the playwright Clare Quilty.

ANSWER: Lolita

[10] Pale Fire and Lolita were both written by this Russian author.

ANSWER: Vladimir Nabokov

<MS>

16. Bonus: One member of this group wrote the opera *Puss in Boots*. For ten points each:

[10] Name this group of Russian composers that consisted of Modest Mussorgsky, Nikolai Rimsky-Korsakov, Cesar Cui, Alexander Borodin, and its leader, Mily Balakirev.

ANSWER: The Mighty Five [accept The Mighty Handful]

[10] This group of composers from France named themselves in a similar fashion to The Five and its members included Arthur Honegger and Francis Poulenc.

ANSWER: Les Six [accept The Six]

[10] Themes from African folk music are integrated into *La Creation du Monde*, or *The Creation of the World*, a ballet by this composer from Les Six, which contains a famous movement in which "The Man and Woman Kiss".

ANSWER: Darius Milhaud

 $\langle RP \rangle$

17. Bonus: The Sieve of Eratosthenes is one method of finding these numbers. For ten points each:

[10] Name these numbers which, unlike composite numbers, are only divisible by one and themselves.

ANSWER: **prime** numbers

[10] This theorem states that every positive integer greater than one can be expressed uniquely as a product of prime numbers. It plays an essential role in number theory.

ANSWER: <u>Fundamental Theorem of Arithmetic</u> [prompt on "unique factorization theorem" or "unique prime factorization theorem]

[10] This other theorem states that the set of prime numbers contains arbitrarily large sequences of positive integers.

ANSWER: Green-Tao theorem

<MS>

18. Bonus: This man came to power after the death of his brother, Mongke. For ten points each:

[10] Name this leader of the Mongols, the grandson of Genghis, whose efforts to invade Japan were thwarted both times by kamikaze.

ANSWER: Kublai Khan

[10] During his rule, Kublai Khan conquered the Song dynasty of China and established this dynasty, whose capital was built at Dadu.

ANSWER: Yuan Dynasty

[10] The Yuan Dynasty eventually ended in 1368 after this major uprising. Influenced by the White Lotus Society, the antimongol army of this rebellion was led by Zhu Yuanzhang, who would become the Hongwu Emperor of the Ming dynasty .

ANSWER: Red Turban Rebellion [accept Red Scarves Rebellion]

<RP>

19. Bonus: A servant walks away from three women seated around a hookah in one of his works. For ten points each:

[10] Name the French artist of that work, *Women in Algiers*, who portrayed the Greek War of Independence in works such as *Massacre at Chios* and *Greece on the Ruins of Missolonghi*.

ANSWER: Eugene **Delacroix**

[10] Delacroix is most famous for this painting of the July Revolution that depicts a bare-breasted woman raising the French flag over a pile of bodies.

ANSWER: Liberty Leading the People

[10] This other painting by Delacroix shows several grotesque figures clawing at the sides of the title boat that Virgil rides with the title subject across the River Styx.

ANSWER: The **Barque of Dante**

 $\langle RP \rangle$

20. Bonus: This country's city of Gaziantep has been the site of many terrorist attacks by Islamist groups in the past several years. For ten points each:

[10] Name this Eurasian country with its capital at Ankara, where an unsuccessful coup against the government took place in July of 2016.

ANSWER: Turkey

[10] The coup of 2016 was largely aimed at this current Turkish president, who declared a state of emergency shortly after on July 20.

ANSWER: Recep Tayyip Erdogan

[10] Another large problem facing Turkey is dealing with the Kurdish people in the eastern part of the nation; this major Kurdish political party, created by Abdullah Ocalan and Murat Karayilan, has fought for the rights of Kurds in Turkey.

ANSWER: Kurdistan Workers Party [also accept PKK]

<AG>

21. Bonus: Its "scanning electron" type can be used to create detailed images of objects like red blood cells and pollen grains. For ten points each:

[10] Identify this piece of lab equipment used to look at small specimens by placing them on slides.

ANSWER: microscope

[10] This part of the traditional light microscope is the nearest lens to the viewer's eye and usually has 10X power magnification.

ANSWER: ocular lens (also accept eyepiece)

[10] One configuration of an eyepiece involves this type of lens placed after the focus. These types of lens produce a real inverted image and are converging.

ANSWER: convex

 $\langle AG \rangle$

22. Bonus: These gods reside in Vanaheim. For ten points each:

[10] Name this group of Norse gods who merged with the Aesir after a namesake war with them.

ANSWER: Vanir

[10] This wealthy Vanir god was exchanged to be with the Aesir gods along with his son Freyr.

ANSWER: Njord

[10] This daughter of Njord and twin sister of Freyr is the Norse goddess of love and beauty.

ANSWER: Freyja

<AN>