

ROUND 5

1. This man wrote that the Constitution was “an experiment, as all life is an experiment” and established the “Fruit of the Poisonous Tree” doctrine. He wrote that rather than “execut[ing] degenerate offspring”, forced sterilization should be continued in (*) *Buck v. Bell*. He dissented on a case which condemned the arrest of Russian anarchists during the Red Scare, *Abrams v. United States*, which misapplied an earlier doctrine of his. This justice explained why falsely shouting fire in a crowded theater is illegal. For 10 points, name this Supreme Court justice who formulated the “Clear and Present Danger” test in *Schenck v. United States*.

ANSWER: Oliver Wendell Holmes, Jr.

1. “Folly, error, sin, avarice/ occupy our minds and labor our bodies”, according to this poem. For 10 points each,

[10] Name this poem of *Les Fleurs du Mal* that claims “ennui”, or boredom, “would make rubbish of the earth/ And with a yawn swallow the world”, and contains an entreaty to the “Hypocrite reader – my likeness – my brother!”

ANSWER: “Au Lecteur” [accept “To the Reader” accept anything implying “the prologue to *Les Fleurs du Mal*” or “the prologue to *The Flowers of Evil*”]

[10] This French author of “The Litanies of Satan” included “The Albatross” and “Au Lecteur” in the first section, “Spleen and Ideal”, of his collection *Les Fleurs du Mal*.

ANSWER: Charles Baudelaire

[10] Baudelaire asks “Have the green succubus.../ Poured out for you love and fear from their urns?” in a poem titled after “A Sick” one of these. Classical authors often invoked these goddesses to inspire their writing.

ANSWER: muse

2. “*Dhikr*” is the act of remembering this figure, and the only unpardonable sin, “*shirk*”, is to associate other beings with this figure. “*Tawhid*” is the oneness of this figure. The abbreviation SWT is commonly appended after this figure’s name in English texts. The first 4 lines of the “*adhaan*” repeat a phrase that means “[This deity] is (*) great”. “The Merciful” and “the Compassionate”, or “*ar-Rahman*” and “*ar-Rahim*”, are the two most commonly invoked of this deity’s 99 names. When a person takes the *shahadah*, he or she professes a belief that there is “no god but [this figure]”. For 10 points, name the one and only deity in Islam.

ANSWER: Allah [“UHL-lah”; accept descriptions such as “God in Islam” or “Islamic God” until mention; prompt on God until mention]

2. His most famous composition used the Shaker hymn “Simple Gifts”. For 10 points each,

[10] Name this American composer, whose works include *Billy the Kid* and *Appalachian Spring*.

ANSWER: Aaron Copland

[10] This piece by Copland, instrumented for only timpani, gong, trumpets, trombones, and horns, was written as a tribute to those fighting in World War II and was commissioned by Eugene Gossens.

ANSWER: Fanfare for the Common Man

[10] This ballet by Copland includes the sections ‘Buckaroo Holiday’, ‘Saturday Night Waltz’, and ‘Hoe-Down’, and depicts the story of the lovesick American Cowgirl.

ANSWER: Rodeo

3. One type of this device relies on overlap between valence and conduction regions to keep the Fermi level constant. Heavy doping in one type of these devices causes electrons to undergo quantum tunnelling through the p-n junction; that type exhibits negative resistance because current decreases as voltage increases. If these devices are (*) reverse-biased, a depletion region will instantly form and electric field strength will increase until breakdown. At that breakdown voltage, current is allowed to pass in the reverse direction in the Zener type of these devices. For 10 points, name these circuit components that only allow current to pass in one direction and can be “light-emitting”.

ANSWER: diodes

3. In this painting, a balding man with an open coat holds onto a man in white as he reaches into the water with the person next to him. For 10 points each:

[10] Name this painting where the title nude figure stretches his arms out in the water as a man in a blue coat attempts to harpoon the title animal in Havana harbor.

ANSWER: Watson and the Shark

[10] This painter of *Watson and the Shark* portrayed Henry Pelham looking off into the distance as he grips the golden leash of the title animal in *Boy with the Squirrel*.

ANSWER: John Singleton Copley

[10] Another of Copley’s paintings depicts a young lady with a bird and one of these animals looking up at her. Thomas Gainsborough painted a cottage girl holding a pitcher and clutching one of these animals.

ANSWER: dog

4. Joseph Heller was inspired by an unfinished novel in this language about the zealous title character, *The Good Soldier Svejk* [SVEYK]. One work in this language begins by contrasting the philosophy of Nietzsche and Parmenides, and sees the protagonist driven back to his wife (*) Teresa because “*Es muss sein*”. Ludvik Jahn writes “Optimism is the opium of the people” in this language, while Helena destroys a formula that Alquist must recreate once he is the only surviving human of the Robot Revolution in a play written in this language. For 10 points, give this language of the authors Jaroslav Hasek, Karel Capek and Milan Kundera.

ANSWER: Czech language [second sentence is *The Unbearable Lightness of Being* for those wondering what those clues are/where that work is]

4. He organized his kingdoms into satraps. For 10 points each:

[10] Name this Achaemenid ruler of Persia who invaded Scythia and was defeated at the Battle of Marathon by Greek forces. He was later succeeded by Xerxes.

ANSWER: Darius I or Darius the Great [prompt on “Darius”]

[10] By invading, Darius wished to punish the Athenians for aiding this revolt in Asia Minor. It is sometimes described as the first phase of the Greco-Persian wars and saw the burning of Sardis.

ANSWER: Ionian Revolt

[10] Darius I founded this city as his capital. It is currently located near the city of Shiraz and is known as the Throne of Jamshid in Persian.

ANSWER: Persepolis

5. This practice was studied by A. E. Elkins in Australia, and Claude Levi-Strauss distinguished between the matrilineal or “real” kind and the patrilineal or “dream-based” kind. Levi-Strauss superseded James Frazer’s work on this; and in a work titled after this practice, he indicated four kinds of relationships between nature and culture. Freud claims that every clan has one of (*) these structures and that its purpose is to prevent incest, in a work that pairs it with Taboo. For 10 points, name these structures associated with myths and family legends, which usually bare a face or mask and are in the form of a pole.

ANSWER: totemism [accept word forms]

5. Answer the following about hyperbolas, for 10 points each.

[10] This basic function that forms a hyperbola has derivative negative one over x-squared, and is used to generally describe the relationship between inversely proportional values.

ANSWER: reciprocal function [accept multiplicative inverse or “f of x equals one over x”]

[10] The eccentricity of a hyperbola is always greater than this number, while for a parabola, the eccentricity would be equal to this number.

ANSWER: one

[10] Hyperbolic Geometry follows all of Euclid’s postulates except for this one, which in normal Euclidean geometry provides for the fact that the sum of the interior angles of a triangle is 180 degrees.

ANSWER: Parallel Postulate [accept Euclid’s Fifth Postulate] <TC>

6. One tale from this culture’s myth system states that the husband of Egeria conned a god into accepting a sacrifice of leeks, hair, and fish instead of humans. Another figure from this culture asked soldiers for “what they bore on their left arms”. That figure’s body was hurled off a namesake “rock” for treason. In addition to King Numa and (*) Tarpeia, the god Quirinus was initially important in this culture, but was later replaced by worship of the Capitoline triad. Among this culture’s main deities were Vesta, goddess of the hearth, and Janus, god of gates and doorways. For 10 points, name this culture whose myths were recorded by Ovid and Virgil.

ANSWER: Roman culture [accept logical equivalents]

6. The protagonist’s weapon of choice is a massive staff which he can shrink down to the size of a needle and store behind his ear. For 10 points each,

[10] Name this work in which Sun Wu Kong retrieves a set of scriptures from India. Zhu Ba Jie – or “Piggy” – and Sha Wu Jing also accompany them in this classic novel.

ANSWER: Journey to the West [accept Xi You Ji; accept Monkey]

[10] *Journey to the West* is one of the four classic novels of this country. Other classical novels from this nation include *Romance of the Three Kingdoms*, which opens during its Yellow Turban Rebellion.

ANSWER: China

[10] Sun Wu Kong attains immortality by eating one of these fruits from the Jade Emperor’s heavenly garden. In *Romance of the Three Kingdoms*, Liu Bei, Guan Yu and Zhang Fei take an oath in a garden of these fruits.

ANSWER: peaches

7. **Chytridiomycosis [kai-trih-dee-oh-mai-KOH-sis] is caused by one of these organisms, and may be responsible for worldwide decline in amphibian populations. Sub-apical Spitzenkorper is the site of new growth in these organisms, in which a dikaryon forms after plasmogamy in the reproductive cycle. Another phylum of these organisms is named for its sac-like (*) spores, or asci. Organisms in this kingdom are made up of filamentous hyphae which are divided by cross walls, or septa, and form a net-like mass, or mycelium. These organisms have a cell wall made of chitin. For 10 points, name this kingdom which includes yeasts and mushrooms.**

ANSWER: **fungi [pl., accept *sing. fungus*]**

7. Tchaikovsky's *Queen of Spades* and Mussorgsky's *Boris Godunov* premièred here. For 10 points each, [10] Name this prominent theater that was used extensively by Tchaikovsky and The Mighty Handful. It was often referred to as Bolshoi before being renamed for a Russian empress.

ANSWER: **Mariinsky Theater**

[10] The Mariinsky theater is located in this city through which flows the Neva river near Lake Ladoga. It was previously known as Leningrad and Petrograd.

ANSWER: **St. Petersburg**

[10] This main roadway in St. Petersburg is the title of a Gogol short story that contrasts the painter Piskaryov with the police officer Pirogov. Prokofiev composed the score to a 1938 film about this road's namesake Russian hero.

ANSWER: **Nevsky Prospekt [accept Alexander Nevsky Lavra]**

8. **One of this architect's buildings on Columbia Point consists of a triangular tower with a hollow cube of glass and steel, while another of his buildings uses an "H"-shaped façade and is connected to an adjacent building by a moving walkway through a light sculpture. This architect of the (*) JFK Library and the East Building of the National Gallery of Art designed a building that forms a "tent" made of two glass triangles on the shores of Lake Erie. For 10 points, name this Chinese-American architect of the Rock and Roll Hall of Fame who also designed the glass pyramids at the entrance to the Louvre.**

ANSWER: Ieoh Ming **Pei**

8. Answer the following about English-Native American relations in New England during the Colonial Period. For 10 points each:

[10] This Native American tribe is remembered by many as the tribe of Squanto which participated in the first Thanksgiving during the reign of chief Massasoit, although that has been debated.

ANSWER: **Wampanoag**

[10] The Wampanoag led a coalition including the Narragansetts and the Nipmucks in this war against the colonists, which included the Great Swamp Fight. It was named after the successor of Massasoit.

ANSWER: **Metacombet's War [or King Phillip's War]**

[10] This earlier conflict between settlers and Native Americans of a certain tribe included such horrors as the Mystic Massacre and was eventually ended by the Treaty of Hartford.

ANSWER: **Pequot War**

9. One character in this play believes her oldest son infected her middle son Eugene with measles because he “was always jealous of the baby”. That character tells Cathleen that she should have become a nun or a concert pianist. Doc Hardy diagnoses one character with (*) consumption after which the aforementioned son, Jamie, confesses that he has been “a rotten bad influence... on purpose [in order] to make a bum out of” Edmund. One character in this play is an alcoholic actor who loves Shakespeare; that man is James Tyrone. For 10 points, name this play that features the morphine-addicted Mary written by Eugene O’Neill.

ANSWER: Long Day’s Journey Into Night

9. This organelle is formed of flattened stacks called cisternae. For 10 points each,
[10] Give this organelle, named after an Italian scientist, that is responsible for modifying and packaging proteins for transport after receiving them from the endoplasmic reticulum.

ANSWER: Golgi apparatus [accept Golgi body or Golgi complex or other reasonable synonyms]

[10] One of these coat-proteins tags vesicles that originate from the endoplasmic reticulum and are destined for the Golgi body, while the other coat-protein tags vesicles that move in the reverse direction. Name either.

ANSWER: COP I or COP II

[10] The Golgi body adds a mannose-6-phosphate tag to molecules destined for this organelle. This organelle with pH 5 is responsible for digesting macronutrients and breaking down waste products for excretion from the cell.

ANSWER: lysosome

10. One character in this opera comforts herself with the aria “Stridono Lassù”, and later uses a whip to beat an unwanted potential lover. The ominous phrase “I will always be yours” is repeated in this opera. Ending with the line “La commedia è finita” [la-co-MEHD-dyah-eh-fee-NEE-tah], this opera features the roles of Colombina who loves (*) Arlecchino [arl-eh-KEE-no] in spite of her dumb husband. One character in this opera sings that he will “Put on the costume” even though he is distraught by Nedda’s infidelity with Silvio. For 10 points, name this opera in which Canio dresses as a clown for a play-within-a-play and kills his wife on stage, composed by Ruggero Leoncavallo.

ANSWER: I Pagliacchi [accept “Clowns” until mention]

10. Selections from this man’s photographs of the Manzanar internment camp were published in the book *Born Free and Equal*. For 10 points each:

[10] Name this photographer who is most famous for his depictions of Yosemite National Park, including his *El Capitan*, *Winter, Sunrise* and *Moon and Half Dome*.

ANSWER: Ansel Adams

[10] Adams pioneered this system of photography, which defined a scale for exposure and print value in order to modify the black and white tones of a photograph.

ANSWER: Zone System

[10] Adams was a member and co-founder of this photography group, which advocated contact printing and the use of its namesake aperture value to provide the greatest depth of field.

ANSWER: F/64 [“F-Stop 64” or “F-64”] <SB/GG>

11. **“JOIN” is a common command used when querying these structures, which are often processed using Mapreduce and Hadoop. Two common implementations of this data structure are named “Oracle” and “Mongo”. They can run faster by being horizontally partitioned in a process called “sharding” and are often “relational”. Atomicity and Isolation are two of the four (*) ACID properties that are used to judge these structures, which can be SQL-based or NoSQL-based. For 10 points, name these organized collections of data that can be searched quickly, such as Quinterest, which are sometimes abbreviated “DB”.**

ANSWER: Databases

11. It contains the line, “Old age should burn and rave at close of day”. For 10 points each, [10] Stanzas in this poem describe “wise men”, “good men”, “wild men”, and “grave men.” This poem also contains advice to the poet’s father to “rage, rage against the dying of the light.”

ANSWER: **“Do Not Go Gentle Into That Good Night”**

[10] “Do Not Go Gentle Into That Good Night” is a villanelle by this Welsh poet who also wrote “Fern Hill” and “Death shall have no dominion”.

ANSWER: Dylan Thomas

[10] Thomas wrote that “the force that drives the [*this color*] fuse through the flower...is [his] destroyer”. At the end of “Fern Hill”, he claimed “time held [him] [*this color*] and dying/ Though [he] sang in [his] chains like the sea.”

ANSWER: green

12. **Other charities have accused this event of “cannibalizing” funding after the subsequent decrease in the amount of donations they received. Controversial outcomes of this event include Facebook receiving up to \$1.5 million in ad revenue. Forbes reports that this sensation has raised over \$100 million for its namesake (*) neurodegenerative disease. Notable performances of this challenge include Kim Kardashian’s, who did it on The Ellen DeGeneres Show, and Matt Damon’s, who used toilet water. For 10 points, name this challenge that raises money for ALS, which went viral on social media in summer 2014.**

ANSWER: ice-bucket challenge [accept **ALS ice** challenge before mention; prompt on partial; accept anything implying that water/ice is being poured over one’s head in order to raise awareness/money for amyotrophic lateral sclerosis] <FK>

12. Answer the following about the branches of philosophy. For 10 points each,

[10] This branch of philosophy discusses the “moral” way to live, and tries to generalize about “right” and “wrong”.

ANSWER: Ethics

[10] This other branch of philosophy is concerned with the theory and principles of beauty and art. Santayana defined beauty as “objectified pleasure” in a work subtitled the “Outline” of this branch’s history.

ANSWER: Aesthetics

[10] Yet another branch of philosophy is this field concerned with the nature of knowledge, using such terms as “True Justified Belief” and “Correspondence Theory” to describe it.

ANSWER: Epistemology <TC>

13. This man founded the newspaper *Iskra*, and his namesake testament was suppressed for criticizing the leader of the Troika. His economic policies included the transition from the forced confiscation of grain to a food tax. This man's writings include his pamphlet *What is to be Done?* and the work (*) *Imperialism, the Highest Stage of Capitalism*. This man published his April Theses, and had earlier split his faction from the Mensheviks. For 10 points, name this leader who came back to Russia on a sealed train during World War I to lead the Bolshevik Revolution of 1917.

ANSWER: Vladimir Lenin or Vladimir Ilich Ulyanov

13. Give the following about Mormonism, for 10 points each.

[10] Mormonism was founded by this man who transcribed the Book of Mormon from golden plates with a seer stone. He died in 1844 in a Nauvoo, Illinois jail.

ANSWER: Joseph Smith Jr.

[10] Joseph Smith received divine information from this angel as to the location of the golden plates. This angel retrieved the plates after Smith finished the transcription.

ANSWER: Moroni

[10] Contrary to popular belief, not all Mormons are polygamous. That distinction belongs to this particular church, formerly run by Warren Jeffs, which has come under heat for forcing underage marriages.

ANSWER: FLDS [accept Fundamentalist Latter Day Saints]

14. A short story from this country is about the daughter of a fox farmer, who ultimately lets the horse, Flora, escape. In one work from this country, the title character, Almásy, is cared for by the nurse Hana and loves Katherine Clifton. In addition to "Boys and Girls" and *The English* (*) *Patient*, works from this country include a novel about being stranded on a boat with Richard Parker and another set in the Republic of Gilead, in which The Commander plays Scrabble with Offred; those works are *The Handmaid's Tale* and *The Life of Pi*. For 10 points, name this country home to Michael Ondaatje, Alice Munro, Yann Martel, and Margaret Atwood

ANSWER: Canada

14. This man was the only person to have an element named after him while he was still alive. For 10 points each,

[10] Name this American scientist who proposed that transuranium elements with magic numbers of protons and neutrons would make up the "island of stability", a hypothetical class of elements with relatively long half-lives.

ANSWER: Glenn Seaborg

[10] Seaborg and his colleagues bombarded uranium with deuterium nuclei to form neptunium-239, which underwent beta decay to form this element. This element was later crucial to the Manhattan Project.

ANSWER: plutonium-239

[10] Seaborg is perhaps most famous for being the last person to modify the periodic table. He proposed to add this series below the lanthanides, which includes neptunium, plutonium and the 8 other elements he discovered.

ANSWER: actinide series [accept actinide concept]

15. This ruler's wives included the historiographically controversial Mariam Uz-Zamani, and this ruler's ministers included Todar Mal [TOH-duhr-mull]. His policies of tax reform were implemented through the *dahsala*, and this ruler moved his capital to the hometown of the mystic after which he named his son, Salim Chisti. That city was the (*) Fatehpur Sikri. Early in his reign, this ruler's regent was Bairam [BEY-rum] Khan, and he promulgated the Din-e-Ilahi. For 10 points, name this ruler who famously married a Rajput princess, won the second Battle of Panipat, and presided over the Mughal empire during its peak.

ANSWER: Akbar the Great

15. Answer the following about archetypal tropes in mythology, for 10 points each.

[10] Deities of this type are often represented by female goddesses because early farmers saw that when seed was planted in this, crops grew out of it. An example is Gaia in Greek mythology.

ANSWER: Earth goddesses [accept clear-knowledge equivalents]

[10] The archetypal Hero often journeys to the underworld, as did the Hero Twins of this culture. The Popol Vuh outlines the underworld named Xibalba [shih-bal-BAH] of this culture, as well as the defeat of Seven Macaw.

ANSWER: Mayan civilization/culture

[10] Cosmic varieties of these objects which end up creating the world can be seen in Chinese mythology. Pangu stayed in one of these for 18,000 years and then emerged from it to separate the *yin* from the *yang*.

ANSWER: Cosmic Egg

16. In one painting by this artist, the title blue-clad figure sits in front of an easel while his wife rests on the right beside a forest. In another work, this artist depicted two girls with Chinese lanterns as the title flowers bloom around them. This artist of *Claude Monet Painting by the Edge of a Wood* and (*) *Carnation, Lily, Lily, Rose* portrayed a line of blindfolded soldiers walking to a dressing station after suffering the title injury in World War I. His most famous painting was controversially received at the Paris Salon and depicts Virginie Gautreau in a bold black dress. For 10 points, name this American painter of *Gassed* and *Portrait of Madame X*.

ANSWER: John Singer Sargent

16. This story ends with the wish that the cable car "would go on and on with her forever". For 10 points each,

[10] Mrs. Sommers plans to spend \$15 on lots of cheap items for her family, but instead indulges in the titular clothing-item, along with boots, gloves, two magazines, a fancy meal and a show at the theater in this short story.

ANSWER: "A Pair of Silk Stockings"

[10] "A Pair of Silk Stockings" is by this author, who wrote about Louise's happiness when she hears her husband Brently Mallord is dead in "The Story of an Hour".

ANSWER: Kate Chopin

[10] Kate Chopin wrote this novel in which Edna Pontellier falls in love with Robert LeBrun. Unable to start an affair with him, however, she commits suicide by walking into the ocean.

ANSWER: *The Awakening*

17. **Methane and ammonia undergo this type of reaction to become hydrogen cyanide in a process named for Andrussow. A ketone becomes an ester in one of these reactions that uses hydrogen peroxide, while DMSO and oxalyl chloride are involved in another reaction of this type which produces an aldehyde or ketone from (*) an alcohol. Swern and Baeyer-Villiger are examples of this type of reaction which always occurs at the anode, regardless of whether an electrolytic or electrochemical cell is being used. For 10 points, a molecule loses electrons in what type of reaction often paired with reduction?**

ANSWER: oxidation

17. The Espionage Act of 1917 was issued under him. For 10 points each:

[10] Name this President who led the US into World War 1, and issued his Fourteen Points during negotiations for the Treaty of Versailles.

ANSWER: Woodrow Wilson

[10] This British wartime Prime Minister came to power after the 1916 fall of Henry Herbert Asquith. He also led the creation of the British welfare state and oversaw the Partition of Ireland in 1920.

ANSWER: David Lloyd George [prompt partial answer]

[10] This other World War 1 leader led the Second Army at the Battle of Verdun, which led to his nickname "The Lion of Verdun".

ANSWER: Henri Philippe Benoni Omer Joseph Pétain or The Marshall Pétain

18. **One island in this river, known as Luna Island, is divided by the Bridal Veil from the larger Goat Island. Class 6 rapids in one section of this river lead to a namesake whirlpool created by erosion of this river's namesake "Escarpment". The namesake fort at the mouth of this river was used during the Revolutionary War as the base of the loyalist unit Butler's Rangers. The (*) Rainbow Bridge spans this river, whose most famous feature can be toured aboard the Maid of the Mist. For ten points, name this river that divides the U.S and Canada after starting from Lake Erie and includes Horseshoe Falls near its namesake falls.**

ANSWER: Niagara River [Grudgingly accept Niagara Falls, I guess] <SM>

18. Answer the following questions about anti-communist unrest in Poland. For 10 points each:

[10] Name this Polish trade union, the first in any Warsaw Pact country to not be run by the Communist Party, which emerged after unrest at the Gdansk shipyards and had a membership of around 10 million by the end of 1981.

ANSWER: Independent Self-governing Trade Union "Solidarity" [or Solidarnosc]

[10] Solidarity's leader at the 1981 Gdansk shipyards protests was this man, who later became the first democratically elected president of Poland after the dissolution of the Soviet Union.

ANSWER: Lech Wałęsa [va-WEH-sha] [be lenient with the pronunciation]

[10] These 1989 negotiations involving Walesa allowed the legalization of trade unions in Poland, among other liberalizing measures. It is generally considered the beginning of the fall of the eastern European communist bloc.

ANSWER: Round Table Talks [accept "Agreement" instead of "Talks"]

19. During one scene in this novel, Mr. Tyke is elected as hospital chaplain. One character in this novel presents plans for more spacious cottages to Mr. Garth, whose daughter Mary is reluctant to marry the irresponsible Fred Vincy. In another subplot of this novel, Dr. (*) Lydgate becomes involved with the corrupt banker Nick Bulstrode. The protagonist of this novel rejects her wealthy neighbor Mr. Chettam in order to marry the author of *The Key to All Mythologies*, Edward Casaubon, although she later falls in love with Will Ladislaw. For 10 points, Dorothea Brooke is the protagonist of what novel, “a study of provincial life”, by George Eliot?

ANSWER: Middlemarch: A Study of Provincial Life

19. Quizbowl is a male-dominated game. For 10 points each, name the following popular make-up brands. [10] Its mascara comes in bright colored bottles, and it is notably promoted by Ellen DeGeneres, P!nk, Taylor Swift and Katy Perry. It's slogan is “Easy, breezy, beautiful. [This Brand.]”

ANSWER: CoverGirl

[10] CoverGirl's biggest competition is this other brand whose popular products include its Baby Lips collection and its BB cream. Its slogan is, “Maybe she's born with it. Maybe it's [this brand]”.

ANSWER: Maybelline

[10] Maybelline is owned by this world's largest make-up company with headquarters in Paris. This company also owns Lancome and Garnier, and is the official make-up sponsor of Project Runway.

ANSWER: L'Oréal Paris <FK>

20. The Real [rey-ahl] Situado was paid using profits from this resource, and the Athenians mined this resource at Laurium. The lead ore galena is an important source for this material, while Romans extracted it with gold from electrum. The discovery of (*) South American tracts for this resource eventually spurred the opening of the Potosi Mines, and it was later found at the Comstock Lode in Nevada. Supporters of this substance often referred to the “Crime of '73” and used the slogan “16 to 1”. For 10 points, name this rare metal that no longer backs US currency and which is used today to make second-place medals.

ANSWER: silver

20. This process changes time signals into frequency domains. For 10 points,

[10] Name this process which is used to decompose periodic functions. Its namesake analysis is related to the theory of using this transformation to represent any wave as a sum of various sine waves.

ANSWER: Fourier Transform

[10] The Fourier transform of a particle's position is taken to be this value, which, in classical mechanics, equals an object's mass times its velocity and is symbolized p.

ANSWER: linear momentum

[10] Fourier analysis can be used to prove this statement, which asserts that the position and the momentum of a particle cannot both be known simultaneously.

ANSWER: Heisenberg Uncertainty principle <TC>

TB. **Strain gauges measure strain by detecting changes in this quantity, which relies on electrons being raised beyond the “band gap”. A Wheatstone bridge can be used to find an unknown fourth value of this quantity, and the quantum Hall effect was used to standardize the representation of this value’s units in multiples of the (*) von Klitzing constant.** This quantity’s inverse AC counterpart is admittance, the reciprocal of which is composed of this and reactance. This quantity is proportional to length over cross-sectional area. FTP, name this electrical quantity defined as voltage over current and measured in Ohms.

ANSWER: electrical resistance [accept conductance until “units”]