

2013 ACF Regionals: Transmitido en Quizbowlese (“This man while traveling through the woods found bathing in a stream the naked goddess Artemis”)

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Packet by Editors 1 ft. Auroni Gupta

Tossups

1. A reception for Henry Kissinger was the last official act of this politician, whose tense but jocular relationship with the Secretary of State was highlighted by a comment to Nixon that, “at least mine speaks English.” This politician was deeply affected by being brought in as a token observer at the Evian Conference, declaring it a failure of civilization. Bruno Kreisky famously stood up to this figure by refusing to close the Schonau transit center. This leader presided over the unification of the Labor Unity and Rafi parties with Mapai and was cleared of “personal responsibility” Agranat Commission, which nonetheless brought down the government. An innocent waiter in Norway was killed in the Lillehammer Affair, a blemish on Operation Wrath of God, authorized by this leader to target Black September. This Foreign Minister under Levi Eshkol and David Ben-Gurion was ousted after the Yom Kippur War, and organized retaliation for Munich. For 10 points, name this fourth PM of Israel, the first woman to hold the office.

ANSWER: Golda Meir [or Golda Meyerson]

2. Two necessary but not sufficient conditions for one form of this property are that all coefficients of an s-domain characteristic equation have the same sign and be non-zero. If those were satisfied one would compute a Routh-Hurwitz array, but, if not, one would know that there are roots in the right half of the s-plane. If the unit circle is in the region of convergence of a transfer function and all poles are inside the unit circle, an LTI system has causality and this property. If the impulse response of an LTI system is absolutely summable, then the system has its BIBO form. For a linear system described by the equation \dot{x} equals f of x comma t , an equilibrium point x -star has one form of this property if all solutions starting near x -star stay near x -star forever; that form is named for Lyapunov. For 10 points, name this property of systems characterized by robustness to small changes in initial conditions.

ANSWER: stability [accept word forms]

3. One of this figure’s consorts was Otrera, the daughter of the east wind Eurus. He rescued his daughter Alcippe by killing her would-be rapist Hallirhothius. He was wounded after attempting to avenge the death of one of his sons, who had been killed while trying to add Heracles to his temple of skulls. During the Gigantomachy, this father of the Macedonian Cycnus was imprisoned in a bronze jar by Otus and Ephialtes. Another of his children was the Ismenian dragon slain by Cadmus during the founding of Thebes; Cadmus later propitiated this god by marrying his daughter Harmonia. He turned Alectryon into a rooster after the youth’s sleepiness led to Helios discovering this god’s affair with Aphrodite. Phobos and Deimos accompanied this son of Zeus and Hera into battle. For 10 points, name this Greek god of war.

ANSWER: Ares [accept Mars until “Greek” is read]

4. In one work by this author, a character places flower petals in a basin full of water and pretends that they are boats. In another work by this author, the protagonist clutches a water-can while ecstatically declaring: “she is beneath this roof”. In that novel by her, an airplane writes the word “toffee” in the sky and Lady Bruton needs help writing a letter supporting mass emigration to Canada. In one of her novels, a character who is embarrassed by his Australian accent and his banker father kisses Jinny in a bush. Dr. Holmes’s visit causes one of her characters to jump out a window. In one novel by her, Rhoda and Neville are among six characters who deliver monologues about their dead friend Percival. In another of her works, Sally Seton and Peter Walsh attend a party at which Septimus Smith’s suicide is mentioned. For 10 points, name this English Modernist author of *The Waves* and *Mrs. Dalloway*.

ANSWER: (Adeline) Virginia Woolf

5. This work takes particular issue with the idea that “equal elementary education” is anything but an imagined construct, and submits the incompatibility of “freedom of conscience” and “compulsory state education.” A letter accompanying this work describes a desire to distance the author from the positions ascribed to him by the recent publication in Russia of *Statism and Anarchy*. This work slanders its primary target as promulgator of a new “iron law of wages”, and marked a major rejection of the political pragmatism espoused by the author’s disciples Wilhelm Liebknecht and August Bebel. This work opens by disputing that “labor is the source of all wealth” and proceeds to

semantically dismember a series of proclamations the author deems to be infected by the evils of Ferdinand Lassalle. Most famous for the phrase “from each according to his ability, to each according to his needs,” for 10 points, name this tract by an aging Karl Marx that mostly plays word games with the socialist platform established in the namesake German town.

ANSWER: *Critique of the Gotha Program* [or *Kritik des Gothaer Programms*]

6. Organocatalysts that exploit this interaction include the (thio)urea ones. The 6-12 Lennard-Jones potential is replaced with a 10-12 potential when modeling this interaction. A signature of this interaction is a redshift in IR spectra, which corresponds to bond lengthening. It was first elucidated in its most common setting by Latimer and Rodebush. This interaction helps stabilize the secondary fold in protein folding and is responsible for the alpha helix. Protic solvents are defined as being able to participate in it. This interaction results from lone pairs of electrons on electronegative atoms bonded to a namesake element. For 10 points, identify this relatively strong intermolecular interaction that explains the high boiling point of water.

ANSWER: hydrogen bonds [or H-bonds; or word forms]

7. Troops sent by this power responded to a sous-chef's murder of President Luis Sanchez in Lima by enforcing the Salomon-Lozano Treaty and securing Leticia. Norwegian North Pole explorer Fridtjof Nansen worked extensively with this power, developing a namesake class of document. Rene Massigli's Conference of Ambassadors had a strange relationship with this power that caused problems after the murder of Enrico Tellini. Josef Burkel took over after a 90% plebiscite wrested de jure administration of the Saar Valley from this power. This power was told of “sprayers” on planes that inflicted devastating chemical attacks on Mek'ele in a speech questioning the idea of “collective security.” This power secured the Aland islands for Finland and was embarrassed by the revelation of the Hoare-Laval Pact. Haile Selassie's momentous speech to this power highlighted its inability to brook Italian aggression in Ethiopia. For 10 points, identify this international body boycotted by the U.S that disastrously managed international affairs after WWI.

ANSWER: The League of Nations

8. On a recent track, one rapper from this city relates how he “never grew up around a family because I'm not a human being,” after observing that “I can't hear nothing, outside these Dre Beats.” That rapper from this city, who grew up with missionary parents learning Arabic before English, is best known for the aforementioned hit that claims “when I leave, the whole world drops” before the hook begins, “voices in the air / I hear them loud and clear.” Machine Gun Kelly enthusiastically represents this city, about which Chicago Bull Joakim Noah opined, “you think [this city]'s cool? I never heard anyone say 'I'm going to [this city] on vacation.’” Those comments incensed this city's current NBA team, which employs the services of Tristan Thompson and Dion Waiters. This city's best current athlete repeatedly crossed up Brandon Knight during the 2013 all-star game, leading to speculation that another player may use an opt-out clause to rejoin this city's team, despite an incident involving Comic Sans stationary. Kyrie Irving plays for the Cavaliers of, for 10 points, what inhospitable Ohio town?

ANSWER: Cleveland

9. One poem by this author declares “It is the faith within the fear / That holds us to the life we curse” and urges us to revere the Self “which is the Universe”. In another poem by this author, the title figure raises a toast to the birds, drinks from a jug, and sings “auld lang syne” on an empty hill at night. One of his poems opens: “For those that never know the light, / The darkness is a sullen thing”. The speaker of one work by this poet of “Mr. Flood's Party” declares that “there is not a dawn in eastern skies” and tells the title figure to “go to the western gate”. Another work by this author of “The Children of the Night” describes “a gentleman from sole to crown” who one calm summer night puts a bullet through his head. For 10 points, name this American poet of “Luke Havergal” and “Richard Cory”.

ANSWER: Edward Arlington Robinson

10. This is the first name of an artist who created a series of portraits composed of the phrase “AK-47” and frequently outlined his own bald head on buildings scheduled for demolition. That artist also cast a series of resin figures representing his country's migrant laborer class in *Chinese Offspring*, and is a Chinese urban artist surnamed Zhang. More famously, this is the *last name* of an artist who used the mathematical formulas of Matila Ghyka to compose *Leda Atomica* and converted an old theater in his home town into a museum with a towering, greenery-covered roof lined with large egg-turrets. That artist's obsession with rhino horns during the 1950s produced *Young*

Virgin Auto-Sodomized by the Horns of Her Own Chastity. For 10 points, identify this surname held by the painter of *Swans Reflecting Elephants* and *The Persistence of Memory*, a Spanish Surrealist.

ANSWER: **Dali**

11. The profile of this process is one way to separate Irvin's curves. One model of this process for multicomponent systems was created by Maxwell and modified by Stefan. Excess interstitials generated by ion implantation lead to a "transient enhanced" form of this process during annealing. A constant used in calculations of this process is equal to Boltzmann's constant times temperature divided by the fundamental charge all times the mobility according to a relation derived by Einstein. One type of this process occurs in systems smaller than the mean free path and is named for Knudsen. That aforementioned constant can be obtained from an Arrhenius-type law and has units of centimeters-squared per second; it is related to the flux of this phenomenon by Fick's first law. For 10 points, identify this transport process that occurs in the presence of sufficient thermal energy and a concentration gradient.

ANSWER: **diffusion** [prompt on mass **transport** or **random walk**]

12. This work notes that the central subject must be considered as a "discourse" in the sense defined by Foucault and arising from a dynamic created by Edward Lane and Louis Massignon. The author of this work repeatedly identifies as a humanist, vilifies Ernest Renan, and largely avoids examining German and Russian forms of the central subject. Feminist critiques often focus on this work's discussion of the short story "Herodias" and Gustave Flaubert's encounter with Kuchuk Hanem. This work sparked a vitriolic debate in *The New York Review of Books* between the author and Bernard Lewis, identified as the leading modern practitioner of the academic form of the central subject, which it defines as a politically-charged power relationship ultimately serving imperialism. Declaring that accounts from men like Lord Byron and Napoleon have led to the West's false conceptualization of the Middle East, for 10 points, identify this landmark 1978 work by Edward Said.

ANSWER: **Orientalism**

13. One tradition dictates that this item is used to counteract 100 of the 101 tears cried by Sisera's mother after Jael's murder of Sisera. Services involving this item often begin with one or seven readings of Psalm 47. It was long used on the first day of the Jubilee year, while during the Ottoman occupation, its use near the Western Wall was forbidden. The user of this item is known as the *ba'al tekiah*, and it can be used to produce the *shevarim* and the *teruah*, the latter of which gives its name to an alternate name for the first day of Tishrei. After a recitation of the Shema Yisrael, it is used to mark the end of Yom Kippur. The walls of Jericho fell after Joshua's priests blew these items. For 10 points, name this object used primarily during Rosh Hashanah celebrations, an instrument made from a curved animal horn.

ANSWER: **shofar** [or **shofroth**; prompt on "trumpet" or "horn" or similar but do not accept "hasosrah"]

14. The first movement of this composer's fifth symphony breaks out into a scherzo in its development section. One of his compositions opens with the an F-sharp minor 6/4 ["six-four"] chord in the low brass resolving to a French sixth. His violin concerto opens with hushed D minor tremolos in the orchestra violins before the soloist enters playing G-A-D. His seventh symphony, which is written almost entirely in the key of C, is in only one movement, and is his last completed symphony. Paavali's mother has a vision of dancers before Death comes for her in his *Valse Triste*. He drew on the same poetic source for *Tapiola* and *Kullervo* as he used for a piece that depicts a bird swimming in the underworld, "The Swan of Tuonela". For 10 points, name this composer of the *Lemminkäinen Suite* and *Finlandia*.

ANSWER: Jean **Sibelius**

15. One leader of this group wound up with his severed head affixed to an enemy's saddle after showing up with 40 men to an 80-man fight; in the subsequent ride back, that leader's snaggleteeth ground into his enemy's leg, leading to the septic death of Sigurd the Mighty. Mael Bucktoothed was a leader of this group, which lost a rebellion at the Battle of Two Rivers but took revenge on Ecgfrith at Nechtansmere under Bridei III, who then punished local monasteries for abandoning the Church of Iona in the Synod of Whitby. This group often used the title "King of Fortriu" and became indeterminately entangled with the Kingdom of Alba as indicated by the Dupplin Cross. The most famous king of this people was given the retroactive cognomen "An Ferbasach," or "the Conqueror," and came from the Alpin line; later rulers like David II and Malcolm III claimed descent from that ruler, Kenneth I. For 10 points, identify this group often symbolically identified as the barbarians behind Hadrian's Wall, an early people who ruler Scotland.

ANSWER: the **Picts** [prompt on "Scots" or really like any general gaelic groups, though not "Irish"]

16. One character with this condition describes it as rust gathering on the key between the inner and outer worlds. While in a bathing suit, one character treated for this condition asks her father to kiss her like he kisses mommy. That character is obsessed with Audrey Hepburn. In *Brideshead Revisited*, Anthony Blanche exaggerates this condition. A character with this condition watches his mother commit adultery under a mosquito net, and compares this condition with Kashiwagi's clubfoot. A character with this condition who bombs a post office is the daughter of Swede Lvov in *American Pastoral*. After sleeping with a prostitute, a character with this condition commits suicide when Nurse Ratched threatens to tell his mother. For 10 points, name this condition that affects Billy Bibbit in *One Flew Over the Cuckoo's Nest* and Mizoguchi in *Temple of the Golden Pavilion*, a type of speech impediment.
ANSWER: stutter [or stammer; prompt on "speech impediment"]

17. A structure similar in shape to one named for this man was first detected with the use of a survival of motor neuron protein antibody. A structure named for this man contains a group of guide RNAs called scaRNAs and is labelled using p80 coilin. The Kit receptor is required for the development of cells named for this man. He co-names a neuron found in the embryonic marginal zone which displays radial ascending processes that contact the pial surface and a horizontal axon plexus located deep in the marginal zone; the other namesake of those neurons is Retzius. His best known work was done with the aid of a modified version of Golgi's black reaction. Those above cells are interstitial cells that regulate pacemaker activity in the intestinal tract. That above structure is also known as a nucleolar accessory body. For 10 points, name this biologist who formulated the neuron doctrine, founding modern neuroscience.
ANSWER: Santiago Ramón y Cajal

18. John Boyd created the OODA Loop to describe event-response behavior in one of these organizations, which feuded over his E-M theory during the 1970s. German-homosexual conspiracy theorist Noel Pemberton Billing railed that the inadequate Farnborough Establishment was hamstringing one of these entities that later benefited from widespread use of "Miss Schilling's Orifice." Giulio Douhet's advocacy of them was championed by Hugh Trenchard. Stanley Baldwin's 1932 speech "A Fear for the Future" advocated for disarmament by warning that a weapon employed by these entities "will always get through." Public testimony before the Lampert Committee and accusations of "almost treasonable administration" after the crash of the *Shenandoah* led the best-known advocate for creating one of these entities to be court-martialed in 1925. Billy Mitchell championed, for 10 points, what kind of military service branch whose examples include the RAF and USAF?
Answer: An Air Force [accept reasonable equivalents like "air power"; accept specific answers like "British Air Force"; prompt on "military" or equivalents; prompt on generic answer of "army" since some clues in the question refer to a period prior to differentiation, but do not accept specific answers like "US Army" or "British Army"]

19. Bartok adapted the first movement of his first concerto for this instrument into the first of his *Two Portraits*. Tchaikovsky wrote his *Serenade Melancolique* for this instrument. Ravel's sonata for this instrument and piano has a "Blues" second movement. Leonid Kogan made a celebrated recording of Khachaturian's concerto for this instrument, for which Ernest Chausson wrote his Poeme. This instrument depicts the Hero's Wife in Richard Strauss's *Ein Heldenleben*. A "Vorspiel" in G minor opens Bruch's first concerto for this instrument. Johannes Brahms's only concerto for this instrument was written for Joseph Joachim. For 10 points, name this primary instrument of Paganini, a stringed instrument that is played by the concertmaster of an orchestra.
ANSWER: violin [or fiddle].

20. One character in this play claims to have lain in an oat-bin under an elder bush to die while in the throes of love. In this play, one character tells of a dream in which she has climbed onto the top of a pillar but sees no way of climbing down, to which another character responds by telling of his dream of trying to climb a tree to steal golden eggs from a bird's nest. An engagement in this play was ended when one character forced her fiancé to jump over her riding crop. Another character tells the story of that incident to Kristin the cook. The two main characters in this play discuss running away to Lake Como to start a hotel. At the end of this play, a green finch is decapitated with an axe by the valet Jean, and the title character exits with a razor to commit suicide. For 10 points, name this play about the title count's daughter by August Strindberg.
ANSWER: Miss Julie [or Fröken Julie]

Tiebreaker. In a loose film adaptation of Genet's *The Thief's Journal* set in this city, the protagonist robs a bookstore in a busy financial district. A guided bus tour in this city in another film is followed by a panoramic scene shot at the top of one of its department stores. An old couple visiting this city is treated wonderfully by their widowed daughter-in-law and like crap by their children in a 1953 movie titled after this city. At the end of another movie set in this city, the male lead whispers something inaudible to the female lead, who he talks to every night at a hotel bar. In the most famous film set in this city, a line of electrical towers fails to stop the main antagonist, who is finally killed by the Oxygen Destroyer. The setting for a 1954 allegory about the damage caused by nuclear weapons for Sofia Coppola's *Lost in Translation*, for 10 points, name this Asian city terrorized by the title figure in *Godzilla*.
ANSWER: **Tokyo** [the other two movies are *Diary of a Shinjuku Thief* and *Tokyo Story*]

Bonuses

1. In this work, Old Sutter's ghost haunts the Doaker home. For 10 points each:

[10] Name this play in which Boy Willie and Berenice argue about the fate of the title instrument.

ANSWER: **The Piano Lesson**

[10] *The Piano Lesson* is by this African-American playwright, whose Pittsburgh Cycle includes the plays *Ma Rainey's Black Bottom* and *Fences*.

ANSWER: August **Wilson**

[10] In *Fences*, the protagonist Troy Maxson is a former baseball player who now does this for a living.

ANSWER: **garbage collection** [accept obvious equivalents like "garbage man", "collects trash", "waste management", etc.; do NOT accept "driving a garbage truck" or equivalents, as Troy is not a driver]

2. Expression of this mitogen is increased by hypoxia, activated oncogenes and by a number of cytokines. For 10 points each:

[10] Identify this growth factor that, *in vivo*, induces angiogenesis and permeabilization of blood vessels, as well as regulating vasculogenesis.

ANSWER: **VEGF-A** [or **vascular endothelial** growth factor]

[10] A key factor in the potency of the 165, 189 and 206 splice variants of VEGF-A is the presence of domains that bind to this molecule. Injections of this anticoagulant, which is not available orally like warfarin, are used to decrease the threat of blood clots.

ANSWER: **heparin**

[10] The VEGF receptors belong to the family of receptor kinases named for this amino acid abbreviated Y. Because it is synthesized from phenylalanine, people with PKU are often deficient in it, and melanin is a derivative of it.

ANSWER: **tyr**osine

3. Students learning the violin by this method often begin with its creator's "Variations on Twinkle, Twinkle Little Star". For 10 points each:

[10] Name this method of music pedagogy rooted in language acquisition theory that involves immersing young children in a "right environment" and encouraging them to learn by ear before they can read sheet music.

ANSWER: **Suzuki** method or movement

[10] This 20th-century German composer invented an approach called "Schulwerk", which teaches music as a form of group play for children, involving dancing, improvising, and playing percussion pieces such as "Gassenhauer".

ANSWER: Carl **Orff**

[10] Carl Czerny and Charles-Louis Hanon both wrote sets of this kind of piece commonly used in piano pedagogy. This term denotes an exercise meant to build musical technique.

ANSWER: **études** [prompt on "study"]

4. Jefferson Davis's term as Secretary of War was marked by peculiar enthusiasm a military force of this type. For 10 points each:

[10] Identify this form of transportation employed on a namesake Colorado trail by E.F. Beale in the 1850s and championed in the US by insane picnic-crasher Hi Jolly, also used by the British EEF in the Senussi and Romani campaigns.

ANSWER: **Camels**, man! [accept any answer involving **Camels**]

[10] Secretary of War Edwin Stanton ignored Beale's offer to house the Camel Corps on his property while the Army was preoccupied with the Civil War, leading to the terrifying release of 70 camels across the Western U.S.

Stanton was later dismissed by Andrew Johnson in violation of this act, leading to an impeachment trial.

ANSWER: **Tenure of Office** Act

[10] There is no historical evidence to explicitly prove that this Kansas Republican, who cast the deciding vote in Johnson's trial, was not driven by an intense pro-camel agenda.

ANSWER: Edmund G. **Ross**

5. He wrote of Wilfred Barclay's attempts to escape his literary biographer in *The Paper Men*. For 10 points each:

[10] Name this 20th century English author who wrote a "sea trilogy" of novels presented as Edmund Talbot's travel journals from aboard a ship voyage to Australia.

ANSWER: William (Gerald) **Golding**

[10] William Golding is best known for this novel about a group of boys, including Ralph and Piggy, who run amok when stranded on an island.

ANSWER: **Lord of the Flies**

[10] In *Lord of the Flies*, the boys decide that whoever holds this object has the right to speak to the group. It is smashed near the end of the novel when the social order falls apart.

ANSWER: **conch** shell

6. Identify these anthropologists involved in some dubious engagement with their subjects, for 10 points each:

[10] A diary entry by this Polish anthropologist notes that he "pawed at Nopula again," but laments the futility of neglecting her exposed, welcoming bosom in favor of field research for works like *Argonauts of the Western Pacific*.

ANSWER: Bronislaw **Malinowski**

[10] One of the less innocent examples of researcher contamination is the work of this anthropologist, who with Tim Asch documented the infamously warlike Yanomami. Unfortunately, he almost certainly instigated much of the violence by bringing small amounts of valuable supplies to a large village, and then also gave them measles.

ANSWER: Napoleon **Chagnon**

[10] This ethnobotanist actually had a problem with under-contamination, since he arrived in Haiti to investigate the reappearance of the deceased Clairvius Narcisse, found him to be looking pretty unresponsive, and proceeded to write the expansive tome *The Serpent and the Rainbow* explaining that Voodoo sorcerers can raise zombies with pufferfish.

ANSWER: Wade **Davis**

7. The topological type of these materials' conduct when their dimension is reduced due to special conducting states that topological order protects from localization or backscattering. For 10 points each:

[10] Identify these materials that do not conduct electricity.

ANSWER: topological **insulators**

[10] One can grow the topological insulator Bi₂Se₃ using this technique, which grows thin films by one layer of atoms at a time, preserving the lattice.

ANSWER: molecular beam **epitaxy** [or word forms]

[10] Insulators typically have a large value for this quantity. Typically symbolized E_{sub-G}, it is the difference in the energy of the conduction and valence bands.

ANSWER: **band gap** energy

8. This system grew out of the Akkerman Convention and quickly evolved from a purely political reform into a sweeping, semi-codified societal and economic transformation. For 10 points each:

[10] Identify this curious experiment begun in the provinces of Moldavia and Wallachia, which drastically improved the standing of Bucharest and laid the basis for a modern-day European state.

ANSWER: **Regulamentul Organic** [or **Organic Regulation**/Statute/etc.]

[10] The Regulamentul Organic was critical in convincing the local administrators of what would become this country that trading for things you don't have and sometimes maintaining your roads can be a totally positive thing.

ANSWER: **Romania**

[10] Before the reforms, Romanians like Tudor Vladimirescu dealt with the lack of infrastructure by becoming *hajduks* – men who engaged in this economic enterprise. Eric Hobsbawm argued that its participants gradually took on early characteristics of modern social movements in a work on the "social" form of this.

ANSWER: **Banditry** [accept all close equivalents like "highway **robbery**, etc.; prompt on "crime" or "theft"]

9. A member of this group wrote of a purple rose's beauty tarnishing with time in "Ode to Cassandra". For 10 points

each:

[10] Name this group of Renaissance French poets that included Pierre de Ronsard and Joachim du Bellay.

ANSWER: La Pléiade

[10] Ronsard's strong advocacy of classical models was a precursor to many arguments from this late 17th-century literary debate at *L'Académie française* about the relative value of older versus contemporary poetry.

ANSWER: "Quarrel of/between the Ancients and the Moderns" [or "*querrelles des Anciens et des Modernes*"; accept clear equivalents for "quarrel" like "dispute"]

[10] The Alexandrian Pleiad included a poet of this name. Another poet of this name wrote two epics opening "Sing, goddess, the anger of Peleus' son Achilleus" and "Tell me, Muse, of the man of many ways".

ANSWER: Homerus

10. Answer the following questions about the Iranian nuclear program, for 10 points each:

[10] David Sanger's "Confront and Conceal" reported that the U.S. had been responsible for this worm, which targeted the industrial controllers of Iranian centrifuges, as part of a program known as Olympic Games.

ANSWER: Stuxnet

[10] Of greatest concern to the U.S. and Israel is this Iranian enrichment facility, buried deep in a mountain and located near a Shia holy city. Its location partially shields it from conventional air attack, and Iran did not disclose its existence to the International Atomic Energy Agency until forced to by leaks.

ANSWER: Fordow uranium enrichment facility (accept Qom, I guess)

[10] Both gaseous diffusion and centrifugation can make use of this gas, which is the form used to store the overwhelming majority of depleted uranium. It's notoriously nightmarish to work with due to a propensity to rapidly corrode most things it comes into contact with.

ANSWER: Uranium Hexafluoride [or UF6; accept hex]

11. This factor represents the frequency of collisions between reactant molecules. For 10 points each:

[10] Identify this constant that multiplies the exponential term in the Arrhenius equation.

ANSWER: pre-exponential factor [or frequency factor; prompt on A or Z factor or characteristic constant]

[10] In an Arrhenius plot, the natural log of the rate constant is plotted against this quantity.

ANSWER: one over temperature [or the inverse of temperature]

[10] The Arrhenius equation can be used to derive the shift factor used in time-temperature superposition, a principle that applies to these materials.

ANSWER: linear viscoelastic polymers

12. Thoth's daughter or wife Seshat was responsible for redrawing boundary lines after a yearly event involving this entity. For 10 points each:

[10] Identify this large body of water in Egypt, whose yearly floods, said to be caused by Isis's tears, made ancient Egyptian agriculture possible.

ANSWER: the Nile River [or an-Nil; or Ieru; or H'pi; or Phiaro; or Abbai]

[10] This god, who had cult centers in Kom Ombo and Arsinoe, was closely associated with the Nile, which was home to his sacred crocodiles.

ANSWER: Sobek [or Suchos]

[10] Another deity associated with the Nile was this goddess of childbirth. Unlike fellow childbirth goddess Meskhenet, this deity took the form of a bipedal hippopotamus.

ANSWER: Taweret [or Taueret; or Toeris; or Tuart; or Taouris]

13. The protagonist of this novel nurses a long-held passion for the pianist Julia McNicholl. For 10 points each.

[10] Name this novel in which Michael Holme is a violinist in the Maggiore Quartet.

ANSWER: An Equal Music

[10] *An Equal Music* is by this Indian author of *Golden Gate*, who wrote about Rupa Mehra's search for a husband for her daughter in *A Suitable Boy*.

ANSWER: Vikram Seth

[10] Vikram Seth has translated this Tang Dynasty poet into English. This poet wrote frequently about alcohol, and his "The River Merchant's Wife" was notably translated by Ezra Pound.

ANSWER: Li Po [or Li Bai; or Li Tai Bo]

14. Philip the Bold of Burgundy became Duke of this principality after marrying one of its innumerable m-initialed noblewomen. For 10 points each:

[10] Identify this region whose cities of Bruges, Ypres, and Ghent were part of the merchant alliance known as the Four Members. It exists today as a largely Dutch-speaking portion of Belgium.

ANSWER: **Flanders**

[10] Flanders shocked France at this 1302 battle sparked by the Bruges Matin killings, which was named for the valuable accessories collected from fallen knights. Robert of Artois was surrounded and killed at this battle after Flemish soldiers, upon hearing him plea for his life, reportedly shrugged and simply noted that they “didn't understand French.”

ANSWER: Battle of the **Golden Spurs**

[10] The Low Countries were a major hotspot for these even weirder acts of public violence, somewhat akin to a Calvinist version of iconoclasm, that helped drive the rise of secular Dutch art.

ANSWER: **Beeldenstorm** [or **Statue Storm**; or **Bildersturm**; or **Image Storm**; or **Icon Storm**; or the **Iconoclastic Fury**;]

15. This artist's talents were wasted for years by George Mucho and squandered later by Mies van der Rohe, who caved to Nazi pressure to dismiss her. For 10 points each:

[10] Name this leading Bauhaus textile artist, the school's only female master, who was responsible for many of the distinctive motifs that characterize Bauhaus furniture.

ANSWER: Gunta **Stoltz**

[10] Stoltz was heavily influenced by this man, the architect of the Fagus Factory, who founded the Bauhaus.

ANSWER: Walter **Gropius**

[10] Stoltz was herself the mentor of Anni Fleischmann, who ended up in Stoltz's class reluctantly after failing to qualify for glass-blowing with her future husband, this artist of *Homage to the Square*.

ANSWER: Josef **Albers**

16. Duff's device is a form of this technique that interlaces a switch structure with a do while loop. For 10 points each:

[10] Identify this technique used to reduce the frequency of branches and loop control instructions by replicating the code inside a loop some number of times.

ANSWER: loop **unrolling** [or loop **unwinding**]

[10] Duff's device makes use of the "fall-through" of case statements, which results when this keyword is absent from the instructions executed. This keyword terminates the execution of the nearest loop in which it appears.

ANSWER: **break**

[10] Loop unrolling can also be used to avoid the data type of these problems, which are created whenever there is a dependence between instructions. Their two most common other types are structural and control.

ANSWER: **hazards**

17. Alaric led this people in an infamous 410 sack of Rome. For 10 points each:

[10] Identify this people who then moved west and set up at Toulouse and later Spain before being defeated by Clovis I at Vouille, having earlier diverged from their Ostrogoth brethren.

ANSWER: **Visigoths**

[10] Alaric was a member of this Visigothic noble clan, which vied with the Amali for supremacy. Most of the cool Visigoths were from this clan, who were generally Arrian and derived their name from a word meaning “bold.”

ANSWER: **Baltings** [or **Balthings**]

[10] This half-Vandal Roman general was an ally of Alaric and Theodosius at the Battle of the Frigidus but later crushed the Visigoth king and absconded with his wife at the Battle of Pollentia. This man held the the Empire together for a few decades despite the best efforts of men like Rufinus to drag it to hell just to spite him.

ANSWER: Flavius **Stilicho**

18. Devotees at this location undergo the *jieba*, a ritual in which incense is affixed to the forehead and burned, leaving visible dots behind, though until 2007 that ritual had been banned for hundreds of years. For 10 points each:

[10] Identify this Chan Buddhist monastery located on Mount Song. Its first abbot was named Buddhahadra, or Batuo, and it is particularly associated with martial arts, especially a namesake type of kung fu.

ANSWER: the **Shaolin** Monastery [or the **Shaolin** Temple]

[10] The *jieba* marks are not to be confused with the scars produced by this technique of traditional Chinese

medicine, in which sticks of compressed ground mugwort herb are burned onto the skin.

ANSWER: **moxibustion** [or **jiushu**; accept word forms]

[10] Another substance used in traditional Chinese medicine is the bile of these carnivores, which is sometimes factory-farmed. In the *iomante* ceremony, another variety of these animals was sacrificed by the Ainu, to whom they are sacred.

ANSWER: **bears** [or Ussuri brown **bears**; or **black grizzlies**; or Asian black **bears**; or moon **bears**; or **Ursus** whatever]

19. Identify these artists who have incorporated bicycles into their works, for 10 points each:

[10] This man's very first readymade consisted of a bicycle wheel affixed to a stool. His other readymades include *Fountain*.

ANSWER: (Henri-Robert-)Marcel **Duchamp**

[10] This artist's *Riding Bikes* can be found in Berlin. This man strapped flashlights to a group of turtles and had them scamper about in the dark in his *Spring Training*, while he incorporated a pillow and quilt into his *Bed*.

ANSWER: Robert **Rauschenberg**

[10] This Chinese artist used some twelve hundred bicycles to create *Forever Bicycles* for the Taipei Fine Arts Museum. This dissident commissioned workers in the city of Jingdezhen to create millions of porcelain sunflower seeds for an exhibit at the Tate Modern.

ANSWER: **Ai** Weiwei

20. This text considers the “golden thread of pleasure” as foremost among the necessary “materials” for the titular phenomenon. For 10 points each:

[10] Identify this work that includes major sections dealing with “expression” and “form,” a treatise supposedly written under the threat of tenure denial by the author of “The Genteel Tradition in American Philosophy.”

ANSWER: *The* **Sense of Beauty**

[10] This Spanish-American thinker behind *Scepticism and Animal Faith* and *The Life of Reason* wrote *The Sense of Beauty*.

ANSWER: George **Santayana**

[10] This ontological work by Santayana discusses the titular concepts – essence, matter, truth, and spirit – as a framework for a new philosophical approach that never quite found its footing.

ANSWER: *The* **Realms of Being**