

## DEES 2014: Desperate Editors Elicit Support

Edited by Will Alston, Rob Carson, Mike Cheyne, Ike Jose, Shan Kothari, John Lawrence, Brian McPeak, Victor Prieto, and Tejas Raje, with additional help from Saul Hankin, Mik Larsen, Jacob Reed and Matt Weiner.

Packet by Maryland A (Jordan Brownstein, Chris Manners, Dan Puma, Sohan Vartak)

### Tossups

1. A critic described this film as gravitating towards the opposing poles of “tyranny” and “chaos” and claimed that it “shows the Soul at Work”. Various authority figures in this movie sit on incredibly high stools. In a scene in this film, the question “How long do I have to live?” is answered with “Till dawn tomorrow...” Technical oddities in this film include the constant use of iris transitions and the odd, angular, hand-painted flat sets designed by Hermann Warm. A book called from this film “To Hitler” was written by Siegfried Kracauer. In a famous shot from this movie, a man whose face is caked in white and black makeup slowly opens his eyes until his expression becomes manic; that character, a somnambulist named Cesare, commits a series of murders at the behest of the title character. For 10 points, name this German silent film directed by Robert Wiene.

ANSWER: *The Cabinet of Dr. Caligari* [or *Das Kabinett des Doktor Caligari*]

2. This battle was the subject of the hastily made propaganda short *The Enemy Strikes!* Chaplain James Hugh O'Neill wrote a prayer beseeching God for “fair weather” for this battle. During it, the losing side posed as the enemy in “Operation Greif,” prompting troops to ask security questions about the capital of Illinois. In this battle, New Year’s Day retaliatory killings were committed by the winning side after Joachim Peiper’s troops committed the Malmedy Massacre. During this battle, Heinrich Luttwitz requested that Bastogne surrender, leading Anthony McAuliffe to reply “Nuts!” For 10 points, name this 1944-1945 battle fought in the Ardennes region, the last German offensive of World War II.

ANSWER: Battle of the Bulge

3. A very mild alcohol oxidant consists of this element’s carbonate on a Celite filter, and is called Fetizon’s reagent. Iron-molybdenum catalysts and catalysts of this element are used in the two methods of industrially synthesizing formaldehyde from methanol. Ethylene oxide is produced from ethylene using a catalyst of this element. This element’s iodide is effective at inducing precipitation in clouds, and this metal forms an alloy with gold called electrum. A mixture containing a complex of it and two ammonia molecules can differentiate between aldehydes and ketones, and is called the Tollens’ reagent. For 10 points, name this second member of the copper family, before gold, which is also used for currency purposes.

ANSWER: silver [or Ag]

4. After this organization was addressed by the Kelly Act and the Wartres Act, its leader, Walter Folger Brown, secretly called the Spoils Conference. The dismissal of an official of this organization led to the Myers case. Robert Ingersoll successfully defended some members of this organization, including Bradley Barlow, from charges of graft. A short-lived competitor to this organization was founded by Lysander Spooner. This organization was involved in the Star Route Scandal, and it was allowed to destroy obscene materials by the Comstock Laws. For 10 points, name this agency first headed by Benjamin Franklin that transports mail in the USA.

ANSWER: United States Postal Service [or U.S. Post Office Department; or U.S. Mail until “mail” is read; prompt on “post” or “mail”]

5. The result of the Taylor-Woods-Hughes experiment verified this experiment and used *Vicia faba* in a thymidine medium containing tritium. One year earlier, a method of density gradient centrifugation using cesium chloride was developed by Vinograd for this experiment. In this experiment, *E. coli* was transferred from a nitrogen 15 to a nitrogen 14 environment. This experiment served as evidence against the dispersive hypothesis of Max Delbrück, which attempted to explain how a double helix unwinds. For 10 points, name this experiment which supported the hypothesis that DNA replication is semiconservative.

ANSWER: Meselson-Stahl experiment

6. This composer's first time basing an entire movement on a tone row was in the "Surge, aquilo" section of a late sacred work dedicated to the city of Venice. During the last two decades of his life, this composer frequently collaborated with the conductor Robert Craft. Tuberculosis prevented this composer of *Canticum Sacrum* from conducting the premiere of a concerto grosso in E-flat he wrote for the wedding of Robert Woods Bliss. One work by this composer is the namesake of a dissonant chord consisting of two major triads a tritone apart. That ballet by him is about a love triangle between the title character, the Ballerina, and the Moor, all of whom are puppets. For 10 points, name this Russian composer of the *Dumbarton Oaks Concerto* and the ballet *Petrushka*.

ANSWER: Igor Stravinsky

7. This philosopher used examples like "Tomorrow there will be a sea battle" to argue that future contingents are neither true nor false. He rejected the existence of actual infinities while allowing possible infinities by division. This philosopher divided mental capacities into the nutritive, perceptual, and intellectual souls. This author of *On Interpretation* argued that substances are predicative complexes of form and matter, and that the soul is the substantial form of the body, his theory of hylomorphism. This author of *De Anima* argued that continuous circular motion was imparted to the heavens by an unmoved mover, and he uses the example of an architect designing a house to illustrate his four causes. For 10 points, name this Greek philosopher whose works include *Physics* and *Metaphysics*.

ANSWER: Aristotle

8. In one scene of this play, characters praise the "eternal lamp of God" after a light above a fireplace unexpectedly turns on. A character in this play is electrocuted on a fence while attempting to hand out half a billion dollars to a crowd. In the first scene, a man gives a woman three minutes to think over his marriage proposal after she arrives on the ship *Amelia*. After being told that some flowers are sterile, the protagonist of this play burns papers belonging to Dr. Hallemeier. It ends with Alquist calling Primus and Helena Adam and Eve, and it is set in a factory operated by the Harry Domin, the husband of Helena. For 10 points, name this play by Karel Capek in which automatons revolt.

ANSWER: R.U.R. [or Rossum's Universal Robots]

9. A poem by this author includes the line "I shall laugh the worst laugh I ever laughed" and ends with a man saying "I'll follow you and bring you back by force." Another poem by this author features the image of a "small sailing cloud" hitting the moon and defines "home" as "something you somehow haven't to deserve" and "the place where...they have to take you in." He imagined his "long two-pointed ladder" reaching "toward heaven" in a poem about picking apples. A short poem by this author states "My little horse must think it queer, to stop without a farmhouse near" ends with the repeated line "and miles to go before I sleep." For 10 points, name this poet who wrote "Home Burial" and "The Death of the Hired Man," whose short poems include "Stopping by Woods on a Snowy Evening."

ANSWER: Robert Frost

10. In preparation for these events, bronze plates called *pinakia* were placed in the slots of an allotment device. At one of these events, a man suggested first that he be given a free breakfast and then that he pay a single silver coin. The courtesan Phryne legendarily flashed her breasts during one of these events, before which men were chosen by lot to serve as *dikastes*. During one of these events instigated by Meletus, Anytus, and Lycon, a man compared himself to a gadfly and gave a speech known as the Apology. For 10 points, name these proceedings often held on the Areopagus, one of which resulted in Socrates's conviction for corrupting youth.

ANSWER: Athenian trials

11. In some traditions, this god cursed his grandson Cipitio with eternal youth. The festival of Atemoztli was dedicated to this god, as was a festival in which weaving sticks were used to ritually "kill" amaranth-dough images of him. More permanent figures of this god were typically carved out of jadeite. This god's main temple was on a namesake mountain, and he was also worshipped alongside Huitzilopochtli at the Templo Mayor. He married the jade-skirted Chalchiuhtlicue after his first wife Xochiquetzal was stolen by Tezcatlipoca. A world of eternal abundance ruled by this god was the destination of deformed people, disease victims, child sacrifices, and those who drowned. For 10 points, name this Aztec god of thunder and rain.

ANSWER: Tlaloc

12. This painting uses a technique also found in William Scrots's portrait of Edward VI. John North's book on this painting's "secret" suggests that Nicholas Kratzer designed it to mark the centennial of Christ's death. Interest in this painting was revived by a 1900 study by Mary Hervey. A half-observed iron crucifix is visible in the upper left corner of this painting, which along with a hymnbook open to the word "Dividit" and a lute with a broken string might be symbols of disunity in the church. In this painting, a green curtain appears behind items like a pair of globes and a shelf full of scientific instruments. For 10 points, name this painting that features an anamorphic skull, a portrait of two diplomats by Hans Holbein.

ANSWER: *The Ambassadors* [or *The French Ambassadors*]

13. After this ruler was told that a minister kept human skins in his closet, he ordered the corpse of that man, Ahmad Fanakati, thrown to dogs. This ruler divided his people into four castes, one of which consisted of foreigners called *semu*. The creation of the Phags-pa script was commissioned by this ruler, whose naval forces were outnumbered ten to one off the coast of Guangdong but still managed to win the Battle of Yamen. Rustichello da Pisa was dictated a narrative of the empire of this ruler, whose garden at Shangdu was called Xanadu by Europeans. For 10 points, name this first ruler of the Yuan dynasty, a grandson of Genghis Khan who was visited by Marco Polo.

ANSWER: Kublai Khan [or Khubilai Khan; or Yuan Shizu]

14. This novel satirizes the British Empire by imagining one of its mean spirited characters as the Collector of Boggeley Wallah. In this novel's chapter "In Which We Enjoy Three Courses and a Dessert," the ladies of Gaunt House, including Lady Bareacres, are bullied into sending a dinner invitation to a low-class woman. A woman in this novel has an affair with the Marquis of Steyne and is later introduced to the Prince Regent by the marquis, and she later takes out a life insurance policy on Jos after separating from her husband Rawdon Crawley; that woman, Becky Sharp, is contrasted with the rich Amelia Sedley. For 10 points, name this "novel without a hero", the masterpiece of William Thackeray.

ANSWER: *Vanity Fair*: *A Novel without a Hero*

15. The aftermath of this event necessitated the conversion of a wine warehouse to a prison. This event was prompted by the reports of the Editing Commission. Alexander Herzen exclaimed "Thou hast conquered, Galilean!" after hearing of this event, after which many forests were designated "cut-off lands" or *otrezki*. Many people who benefitted during this event had to pay a large redemption tax. This event's architect was Nikolai Milyutin, who created local governments called *zemstva* after its occurrence. Its shortcomings led to the rise of the Peoples' Will, who assassinated the ruler that ordered it. For 10 points, identify this reform undertaken by the "Tsar Liberator" Alexander II.

ANSWER: emancipation of the serfs [or obvious equivalents indicating the freeing of Russian peasants; or Emancipation Reform of 1861; or Peasant Reform of 1861; prompt on "reforms of Alexander II" and similar]

16. The time derivative of the Wigner function is proportional to its Moyal bracket with the Wigner transform of this quantity. The von Neumann equation relates the time derivative of the matrix operator with its commutator with this quantity. When this quantity is time-dependent, the time translation operator is given by the Dyson series. The existence of a unitary operator that commutes with this operator gives rise to degeneracy. The time derivative of the wave-function is proportional to this operator applied to the wavefunction according to the Schrödinger equation. For 10 points, name this operator that is said to generate time translations and corresponds to the total energy of a system.

ANSWER: Hamiltonian [prompt on H]

17. In one story by this writer, the advertisement "Girl, unstable, height 152 centimeters, seeks husband" is placed in the newspaper after a doctor concludes that marriage will cure the girl in question. In addition to "The Treatment of Bibi Haldar," this author wrote a story in which Mrs. Croft repeatedly expresses her excitement over the presence of an American flag on the moon. In another story by her, Rohin explains that the title word means "loving someone you don't know." Mr. Kapasi, who gives tours to Mr. and Mrs. Das and saves Bobby from attacking monkeys, is the title figure of a collection by this author in which all of the aforementioned stories appear. For 10 points, "The 3rd and Final Continent" and "Sexy" appear in *Interpreter of Maladies*, a collection by what Indian-American writer?

ANSWER: Jhumpa Lahiri

18. A Sturm Chain is a sequence of these objects obtained by application of a modified form of Euclid's algorithm, and algebraic varieties are certain level sets of them. Every matrix  $M$  will yield zero when substituted into one of these functions generated by taking the determinant of  $M$  minus  $\lambda$  times  $I$  according to the Cayley-Hamilton theorem. Any continuous function on a closed interval can be approximated arbitrarily closely by one of these functions according to the Weierstrass approximation theorem. Functions may be interpolated with the sets of these named for Chebyshev or Lagrange and there is no general algebraic solution to ones of degree five or higher and. For 10 points, name these functions with powers of  $x$  and coefficients, like the quadratic  $x$  squared plus two  $x$  plus 3.

ANSWER: polynomials

19. This psychologist applied his theories to the teaching of math in his 1922 work *The Psychology of Arithmetic*. In one experiment, this man ordered several blindfolded adults to continually draw 4-inch lines on paper, leading him to theorize that repetition was not a sufficient condition for learning. This man authored a series of "word books" to help teachers instruct children how to read. This man is best known for conducting an experiment that involved putting a piece of salmon on the opposite side of a gate controlled by a latch, from which he theorized that behaviors that result in a good outcome are more likely to be repeated in the future. For 10 points, name this psychologist who posited the law of effect after conducting experiments with cats and puzzle boxes.

ANSWER: Edward Thorndike

20. Clergy of this religious branch go on a yearly retreat called Vassa during the wet season. One scripture from this religious branch tells of a king who gives away a rain-bringing white elephant and his two children. That story is found in part of the Khuddaka Nikaya. This religious branch's path to salvation is described through seven stages of purification in the Visuddhimagga, which was written by Buddhaghosa. The vipassana movement includes schools from this branch that emphasize the three marks of existence. Groups including Vinaya and Abhidhamma are found in this branch's central collection of texts, which constitute the Tipitaka, or Pali Canon. For 10 points, name this school of Buddhism contrasted with Mahayana.

ANSWER: **Theravada** Buddhism [prompt on "Hinayana" or "Buddhism"]

21. In January 1982, this team became the first to lose a Super Bowl after scoring more touchdowns than their opponent, and seven years later they lost another Super Bowl to the same opponent on a last minute John Taylor touchdown. This team's coach holds the NFL record for longest tenure without a playoff win, and in one playoff game their starting quarterback suffered a torn ACL on his first pass attempt. In recent years, this team has used first round selections on tight ends Jermaine Gresham and Tyler Eifert, and a second round pick on a red-headed TCU quarterback. For 10 points, name this AFC North team currently led by AJ Green and Andy Dalton.

ANSWER: **Cincinnati Bengals** [accept either]

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### Bonuses

1. This poet attributed his exile to a "carmen et error" in his *Tristia*. For 10 points:

[10] Name this Roman poet best known for his *Metamorphoses*.

ANSWER: Publius Ovidius Naso

[10] This poem by Ovid was written in 2 CE and consists of three sections of romantic advice. It was followed shortly by his *Remedia Amoris*.

ANSWER: Ars Amatoria [or *The Art of Loving*]

[10] Ovid also wrote the poem *Ibis*, which was inspired by a poem by this Greek and Libyan writer of *Aitia*, a poem about mythological causes. He wrote the *Pinakes* while working at the Library of Alexandria.

ANSWER: Callimachus

2. This process takes place at convergent boundaries between tectonic plates, which are called its namesake "zones." For 10 points each:

[10] Name this process in which one plate moves under another. The occurrence of this process on the ocean floor results in the formation of oceanic trenches.

ANSWER: subduction

[10] Subduction involving one or more continental plates causes this process, the formation of mountain ranges when a plate is pushed upward.

ANSWER: orogeny

[10] This type of flat-topped volcanic mountain is found underwater. They were discovered by Harry Hammond Hess, who named them after a geology building at Princeton.

ANSWER: guyots [or tablemounts; prompt on seamounts]

3. This country has recently been ripped apart by strikes by parties attempting to amend its constitution. For 10 points each:

[10] Name this country whose Nationalist Party and Jatiya Party boycotted 2014 elections that were won by a party led by Sheikh Hasina. Her father Sheikh Mujibur Rahman was a leader in this country's war of independence against Pakistan.

ANSWER: People's Republic of Bangladesh

[10] The Nationalist and Jatiya Parties are particularly pissed at this party, which currently leads Bangladesh and helped secure its independence. It merged with another party to form the BAKSAL Party in the 1970s.

ANSWER: Bangladeshi Awami League [or Bangladeshi People's League]

[10] This is the leading industry of Bangladesh. A factory creating products in the industry in Dhaka collapsed in 2013, killing over 1000 people.

ANSWER: textiles

4. These mathematical objects are sets with an associated binary operation satisfying four axioms. For 10 points each:

[10] Name these objects that must satisfy the conditions of closure and associativity and have an identity and inverses for each element.

ANSWER: **groups**

[10] A group isomorphism is a bijective one of these. These maps are structure-preserving, meaning that for one of these called  $F$ ,  $F(xy) = F(x)F(y)$ .

ANSWER: **homomorphism**

[10] Up to isomorphism, there are only two groups of order 4. One is the cyclic group, and the other is this. This group is the smallest non-cyclic group, and it is isomorphic to the dihedral group of order 4.

ANSWER: **Klein** group [accept **Klein** four-group or **Viererguppe** or **V four** or **Z two cross Z two**]

5. In his first namesake book, this man travels to a piece of land called Bountiful after being beaten by his brothers Laman and Lemuel. For 10 points each:

[10] Name this man who retrieves the Plates of Brass for his father Lehi after killing Laban and disguising himself. After arriving in the Americas, the Lamanites split off of his namesake group.

ANSWER: **Nephi**

[10] Nephi and Lehi appear in this religious text of the Latter-Day Saints, which Joseph Smith claimed to have transcribed from the Golden Plates.

ANSWER: **Book of Mormon**

[10] The Book of Ether tells the story of these people whose namesake ran away from the building of the Tower of Babel and went to America. A battle between groups of these people under Shiz and Coriantumr leads to the death of millions of people from this tribe.

ANSWER: **Jaredites** [or equivalents like **descendants** of **Jared**]

6. This painting inspired a musical composition by the German composer Giselher Klebe. For 10 points each:

[10] Name this 1922 Paul Klee painting that depicts four bird-like creatures sitting on a wire attached to a hand crank above a pink rectangular pit.

ANSWER: **Twittering Machine** [or **Die Zwitscher-Maschine**]

[10] *Twittering Machine* was condemned as “degenerate art” by the Nazis, who also condemned this Die Brücke artist’s woodcut *The Prophet*. He also painted the polyptych *The Life of Christ*.

ANSWER: Emil **Nolde**

[10] Klee taught at the Bauhaus alongside this Russian-German painter who wrote *Concerning the Spiritual in Art*. This man’s painting of a mounted knight lent its name to a group he founded, The Blue Rider.

ANSWER: Wassily **Kandinsky**

7. A patriotic man yells at the narrator of this work for allowing his daughter to nakedly run around the beach. For 10 points each:

[10] Name this novella in which a waiter shoots Cipolla after the latter hypnotizes him into kissing him on stage.

ANSWER: **Mario and the Magician** [or **Mario und der Zauberer**]

[10] This novella by the author of “Mario and the Magician” focuses on an aging writer, who dies while watching the teenage boy Tadzio wrestle on the beach of the title city.

ANSWER: **Death in Venice** [or **Der Tod in Venedig**]

[10] This German author of *The Magic Mountain* wrote “Mario and the Magician” and *Death in Venice*.

ANSWER: (Paul) Thomas **Mann**

8. This saxophonist led a group simply called “The Quintet” on his last live album, *Jazz at Massey Hall*. For 10 points each:

[10] Name this bebop saxophonist, who wrote songs like “Blues for Alice” and “Ornithology” and was nicknamed “Bird.”

ANSWER: (Charles) “Charlie” **Parker**, Jr.

[10] The Quintet included Max Roach who played this instrument. This instrument was also played by Gene Krupa and Buddy Rich.

ANSWER: **drums** [or **drum** set; prompt on “percussion”, I guess]

[10] *Jazz at Massey Hall* includes a recording of this jazz standard, co-written by “Dizzy” Gillespie and Kenny Clarke, whose title phrase is a three-note figure going up an octave from F to F, and then down an octave again.

ANSWER: “**Salt Peanuts**”

9. A loss for troops under the Duc de Villeroi and Maximilian Emmanuel II of Bavaria, this battle was fought between Tavers and the Belgian town for which it is named. For 10 points each:

[10] Name this battle, after which most of Belgium fell under the control of the Grand Alliance.

ANSWER: Battle of **Ramillies**

[10] The Battle of Ramillies was won by this English general. Blenheim Palace was built to honor one of this man’s victories that he won while commanding forces alongside Eugene of Savoy.

ANSWER: John **Churchill**, 1st Duke of **Marlborough** [accept either underlined part]

[10] Blenheim and Ramillies were both battles during this conflict, which was fought over Louis XIV’s attempt to put his grandson on the throne of a southern neighbor.

ANSWER: War of the **Spanish Succession**

10. Most of this novel's chapter titles are run-on sentences with no punctuation that parody the Dick and Jane readers. For 10 points each:

[10] Name this novel about Pecola Breedlove, whose desire for whiteness leads her to fantasize about having the title feature.

ANSWER: *The* **Bluest Eye**

[10] *The Bluest Eye* was penned by this African American Nobel laureate, who also wrote a novel set at 124 Bluestone Road, *Beloved*.

ANSWER: Toni **Morrison**

[10] In *The Bluest Eye*, none of these flowers bloom in 1941 after Pecola is impregnated by her father. Paul Zindel wrote a play in which Matilda Hunsdorfer investigates the effect of gamma rays on these flowers for a science fair.

ANSWER: **marigolds** [or *The Effect of Gamma Rays on Man-in-the-Moon* **Marigolds**]

11. This guy introduced “redbacks,” a currency that featured Deaf Smith on the five dollar bill and would lead to massive inflation. For ten points each:

[10] Name this second President of Texas.

ANSWER: Mirabeau Buonaparte **Lamar**

[10] Lamar played a key role in this 1836 battle in which Santa Anna’s forces were defeated by Sam Houston while taking their siesta. Santa Anna was captured following this battle that led to the signing of the Treaties of Velasco.

ANSWER: Battle of **San Jacinto**

[10] Mirabeau Lamar hated this agreement, which forced Texas to give up its claim to New Mexico. Created during its namesake year, this agreement allowed California to enter the Union as a free state and passed a harsher Fugitive Slave Act.

ANSWER: The **Compromise of 1850**



12. The first of this poem's choruses states "None but the brave / None but the brave / None but the brave deserve the fair." For 10 points each:

[10] Name this poem by John Dryden subtitled "The Power of Music" which describes how Timotheus's singing inspires the title monarch to seize a torch and set a palace on fire.

ANSWER: "**Alexander's Feast**; or, the Power of Music: An Ode in Honour of St. Cecilia's Day"

[10] Dryden also depicted these two lovers in his play *All for Love*. In a Shakespeare play, one of these lovers poisons herself with an asp after they are defeated at the Battle of Actium.

ANSWER: Mark **Antony** AND **Cleopatra** [accept in either order]

[10] Dryden also wrote this satire in which Thomas Shadwell becomes the new King of Nonsense. It begins with the line "all human things are subject to decay."

ANSWER: **Mac Flecknoe**; or, *A satyr upon the True-Blew-Protestant Poet, T.S.*

13. An extremely endangered sparrowhawk and a similarly endangered scops owl are named for and found on Anjouan, an island in this archipelago. For 10 points each:

[10] Identify this Indian ocean archipelago, the world's primary exporter of ylang-ylang. It currently contests ownership of the nearby islands of Mayotte with France.

ANSWER: the **Comoro** Islands [or the **Comoros**; or the **Comore**s; or the Union of the **Comoros**]

[10] Most of the extant examples of *Latimeria chalumnae*, one of the two species of this fish, have been caught in the Comoros archipelago. These fish were thought to be extinct since the Cretaceous, until one was caught in 1938.

ANSWER: **coelacanth**s

[10] The Comoros are home to some of the few examples of this clade of strepsirrhine primates outside of Madagascar, to which they're otherwise endemic. You may be familiar with the "ring-tailed" variety.

ANSWER: **lemurs** [or **Lemuroidea**]

14. The Tobacco Revolt targeted this dynasty, whose rulers constructed the Sun Throne. For 10 points each:

[10] Name this Iranian dynasty, which gave away pretty much everything valuable it had in the D'Arcy concession. The newspaper *Qanun* ran articles that promoted a constitutional revolution against this dynasty.

ANSWER: **Qajar** dynasty [or Doodmān e **Qājār**; accept alternate romanizations: **Qachar**, **Gajar**, etc.]

[10] The Qajar Dynasty was overthrown by Reza Khan, the founder of this other Iranian dynasty. Reza's son, who also belonged to this dynasty, would be overthrown in the 1979 Iranian Revolution.

ANSWER: **Pahlavi** dynasty

[10] Access to this resource was given away by the D'Arcy concession. Mohammed Mossadegh planned to nationalize an Anglo-Persian company that produced this resource and which later became known as BP.

ANSWER: crude **oil** [or **petroleum** or equivalents; prompt on "fuel" or "fossil fuel"]

15. This economist pointed out that it's very hard for planners to rationally distribute resources without a price mechanism to guide their decisions in "Economic Calculation and the Socialist Commonwealth." For 10 points each:

[10] Name this economist, who argued for laissez-faire capitalism based on his studies of decision making, called praxeology, in his magnum opus *Human Action*.

ANSWER: Ludwig von Mises

[10] Mises was part of this school of economics, whose other members included Friedrich Hayek and Eugen von Böhm-Bawerk. It stresses individual choice in economics, and is advanced today by Lew Rockwell.

ANSWER: Austrian school of economics

[10] Another member of the Austrian School, Frank Fetter, criticized this economist for abandoning a theory he put forth in his 1907 book *The Rate of Interest*. He also developed debt-deflation theory.

ANSWER: Irving Fisher

16. In the twelfth century, this form of polyphony was divided into "discant", which was note-against-note counterpoint, and the "purum" form, in which one voice moved freely against the other. For 10 points each:

[10] Name this term also applied to the earliest form of medieval polyphonic music, in which voices sang in parallel fourths and fifths. *Musica Enchiriadis* is often considered the earliest treatise to define it.

ANSWER: organum

[10] Organum is particularly associated with Leonin and Perotin, two composers from this modern-day country, whose other medieval composers include Adam de la Halle and Guillaume de Machaut.

ANSWER: France

[10] One of the earliest descriptions of organum via oblique motion is in this Italian music theorist's *Micrologus*. He is credited with the invention of staff notation, solmization syllables, and a namesake mnemonic hand system.

ANSWER: Guido of Arezzo [or Guido Aretinus; or Guido Monaco; or Guido d'Arezzo; or Guy of Arezzo]

17. This person gave her "Freedom or Death" speech in Hartford, Connecticut. For 10 points each:

[10] Name this British suffragette, whose hunger strikes were combated with the Cat and Mouse Act.

ANSWER: Emmeline Pankhurst

[10] Pankhurst stopped her suffragist activities during this war, instead advocating the US's entry into it during a speaking tour. This war was sparked by the assassination of Franz Ferdinand in Sarajevo.

ANSWER: World War I [or First World War; or WWI; or The Great War]

[10] During World War I, Pankhurst popularized the practice of handing out these objects to men who weren't in uniform. These objects were intended to shame young men into enlisting.

ANSWER: white feathers

18. These organelles contain acid hydrolase enzymes to break down waste materials. For 10 points each:

[10] Name these organelles that can break down worn-out organelles or food particles.

ANSWER: lysosomes

[10] Enzymes that are bound for lysosomes are tagged in the Golgi apparatus with this molecule.

ANSWER: mannose-6-phosphate

[10] This disease results from a deficiency of alpha-galactosidase A, removing the ability of lysosomes to break down globotriaosylceramide. This disease leads to angiokeratomas on the skin.

ANSWER: Fabry's disease

19. The opening section of this work is dedicated to "The Elimination of Metaphysics." For 10 points each:

[10] Name this 1936 work by A. J. Ayer that argues for the verification principle in evaluating synthetic propositions. It also proposes that ethical sentences only express emotional attitudes.

ANSWER: Language, Truth, and Logic

[10] Ayer's assault on metaphysics echoed that of this group of logical positivist philosophers, whose members included Moritz Schlick and Rudolf Carnap.

ANSWER: Vienna Circle [or Wiener Kreis]

[10] *Language, Truth, and Logic* was titled in homage to Friedrich Waismann, who helped articulate this concept from Wittgenstein's *Philosophical Investigations*. It is the spoken component of a "form of life," and a famous example is used by two builders.

ANSWER: language games

20. Chemical potential is equal to the standard chemical potential minus  $RT$  times the natural log of this quantity. For 10 points each:

[10] Name this dimensionless quantity equal to the ratio of concentrations times gamma in the Debye-Hückel equation.

ANSWER: activity

[10] The Debye-Hückel limiting law uses the activity coefficient and the charges of dissolved ions to calculate this value, symbolized  $I$ , which is used to measure the concentration of all of the ions in solution.

ANSWER: ionic strength [prompt on I]

[10] The activity of a species may be determined using freezing point depression, which is one of these properties. These properties depend on the number of solute particles present in a solution.

ANSWER: colligative properties

21. A sacred statue of this god in Dendera, the location of her major temple, was taken to Edfu every year for the Sacred Marriage ceremony. For 10 points each:

[10] Name this goddess who, in inimitable Egyptian fashion, was "associated with" the Milky Way and the flooding of the Nile. Either this goddess or Sekhmet was sent to destroy humanity, and later pacified with beer, by Ra.

ANSWER: Hathor [or Hesat]

[10] The Sacred Marriage ceremony took place between Hathor and this falcon-headed god who represented Lower Egypt in a long-running battle with Set. He's the son of Isis and Osiris.

ANSWER: Horus

[10] Two of the major cult objects associated with Hathor had musical purposes: one was a rattle consisting of discs threaded onto rods that spanned a hoop on a handle, while the other was a crescent-shaped bead necklace that may have been used as a percussion instrument. Name either.

ANSWER: the sistrum or the menat [accept either]