

## FLopen 2020

Packet E: Add pronunciation guide for Zero Suit Samus (“SAM-oo”)

Edited by: Taylor Harvey and Jonathen Settle

Written by: Mateo Javier Acosta, Mike Bentley, Nicholas Dai, Anthony Delgado, William Grossman, Shawn Jarrard, Zachary Knecht, Leo Law, Lalit Maharjan, Tracy Mirkin, Khanh Nguyen, Grant Peet, Ani Perumalla, Jason Zappulla, and the editors

Tossups

1. **Important primary sources on this polity include the last two books of the *Flower of the Histories of the East* by Hayton of Corycus and the writings of Vartan Areveltsi. Kaykaus II submitted to a ruler of this polity by offering him a pair of shoes with tiny portraits painted on the soles. The founder of this polity executed rebel Al-Kamil Muhammad by cramming his mouth full of pieces of his own flesh. After the death of its last competent ruler, this polity was plunged into a civil war between the forces of Hasan the Tall and Hasan the Small. (\*) Ghazan and Abu Sa’id Bahadur ruled this polity, successor states of which included the Jalayirids and Muzaffarids. This polity’s founder lost the Battle of Ain Jalut. For 10 points, name this Persia-based khanate founded by Hulagu Khan, whose name implies that it is inferior to the Mongol Khaganate.**

ANSWER: **Il-khanate** [accept **Hulagu**’s **Khanate**, **House of Hulagu**, or **Ulus Hulagu** until “Hulagu” is read; accept any vowel variations of **Hulagu** like **Hulegu**, **Hiilagu**, or **Huelagu**; prompt on **Mongol Empire**, **Mongol Khanate**, or **Mongol Khaganate** by asking “what sub-khanate?”; reject “Il-khaganate”]

<World History, KN>

2. **A pluralization of this term titles an essay collection by the anthropologist Michael Jackson that analyzes Maori society through the lens of Merleau-Ponty’s thought. Alfred Schutz divided the subjects of this concept into classes of predecessors, successors, contemporaries, and consociates. Edmund Husserl discusses this term in the fifth of his *Cartesian Meditations*, where he defines it as the already pre-given intentional background. *The Theory of Communicative Action* states that this concept becomes (\*) “colonized” when discursive consensus has been normalized. According to Jürgen Habermas, this term describes the social sphere in which the individual interacts with society at large, in contrast to the professional and administrative “system.” For 10 points, give this term used in continental philosophy to refer to the artificial and natural realm inhabited by humans.**

ANSWER: the **lifeworld** [accept **Lebenswelt**]

<Philosophy, TH>

3. **An artifact named for this family depicts the head of Medusa on its bottom and a cryptic scene possibly from the *Hermetica* on its interior; that artifact is this family’s namesake “cup.” A collection named for this family features an anasyrma (“an-ass-air-muh”) whose name translates as “Venus of the beautiful buttock.” This family names the largest sculpture ever recovered from antiquity, which depicts a dog looking on as a woman and two men grapple with a (\*) bull. A sculpture named for this family was unearthed during the excavation of the Baths of Caracalla and shows its subject clutching three apples in one hand behind his back; that sculpture named for this family is the centerpiece of a namesake collection in Rome and shows an ultra-muscular man leaning on a club while draped with the skin of the Nemean Lion. For 10 points, what Renaissance family names a Hellenistic sculpture by Lysippus depicting Hercules?**

ANSWER: **Farnese** family [accept **Farnese Hercules**; accept **Farnese Bull**; accept **Farnese** Collection; accept **Farnese Cup**]

<Painting/Sculpture, TH>

4. *Description acceptable.* A plot of the magnetization deflection versus time with a reversed peak decaying through zero showed that E. M. Purcell and R. V. Pound created this property in a crystal of lithium fluoride. By exploiting the bounded kinetic energy of the Hubbard model, Braun et al. produced this property in a system with motional degrees of freedom; that system was an optical lattice of bosons. In a two-level system with states zero and one, (read slowly) because  $d-S$  over  $d-E$  is proportional to the  $\ln$  of the ratio of  $N$ -sub-zero to  $N$ -sub-one, this property arises when that ratio is less than one, (end read slowly) or at the onset of (\*) population inversion. Boltzmann factors increase with increasing energy in systems with this property. In systems with this property, adding energy decreases entropy. For 10 points, systems with what property unexpectedly transfer heat to systems with positive temperature?

ANSWER: negative temperature [or negative absolute temperature; accept temperature is less than absolute zero temperature; accept temperature is less than zero Kelvin; accept temperature is less than zero Rankine; accept negative spin temperature; prompt on population inversion; reject “less than zero Celsius” or “less than zero Fahrenheit”]

<Physics, LL>

5. A 2018 Benjamin Balint book titled for one of these events discusses the valuable manuscripts possessed by the 101-year old Israeli executrix Esther Hoffe. While giving an oration at one of these events, a man is interrupted by an uproar after a student assaults a washerwoman, before the man realizes that everyone present is hiding badges under their long beards. In a novel titled for one of these events, the protagonist discovers two policemen being (\*) flogged in the junkroom of a bank. A character gets advice on coping with one of these events by the sickly Herr Huld and the cynical painter Titorelli. At the end of a novel titled for one of these events, a man is taken to a quarry by two officers before exclaiming “Like a dog!” as he is killed. For 10 points, name this type of proceeding that titles a Franz Kafka novel featuring Josef K.

ANSWER: a legal trial [accept prozess; accept a court case; accept a legal proceeding; accept a legal hearing; accept a cross examination; accept a questioning; accept an interrogation; accept *Kafka’s Last Trial*]

<Long Fiction, TH>

6. A large one of these objects is shown getting out of a taxi in a photograph from a 2009 Laurie Simmons series. Trans artist Greer Lankton is best known for making these objects, which she modified in between exhibitions. Many of these objects hang from the trees on a channel island in the Xochimilco (“shoh-chee-MEEL-koh”) region of Mexico City. Rod-like wooden examples of these objects from Japan are called *kokeshi*, while round, hollow examples inspired by Zen tradition are known as (\*) *darumas*. German surrealist Hans Bellmer is renowned for his grotesque works made from the parts of and resembling these objects. Brittle 19th century examples of these objects with a realistic, matte finish were known as bisque, while a character created by cartoonist Rose O’Neill inspired a kitsch type of them called kewpies. For 10 points, name these toys exemplified by American Girls and Raggedy Anns.

ANSWER: dolls [accept dummies or mannequins; accept sex dolls or blow up dolls; accept bisque dolls or kewpie dolls; prompt on toys]

<Other Arts: Visual, TH>

7. Franz Kurowski is best known for his ahistorical and controversial books about users of these things, which were written about in a memoir by Belton Y. Cooper. The Yakushev family is one of only two groups in Belarus possessing an official license to “hunt” for historical examples of these things. Dmitri Mendeleev’s son Vasily designed an early one of these objects, which were constructed *en masse* at the Nibelungenwerke. The city of (\*) Chelyabinsk was once known as [*these things*]-ograd. A museum in Bovington contains the world’s largest collection of these things, including one of the last working Tiger 131s. These things were first used near the town of Courcellette, while about six thousand of these land-based objects were deployed at the Battle of Kursk. For 10 points, name these vehicles, famous models of which include the T-34, the Sherman Firefly, and the Panzer. ANSWER: tanks [accept tank destroyers or TDs; prompt on armored fighting vehicles by asking “what specific type?”]

<Other History, KN>

8. In a story by this author, Elinor exclaims that Suffragettes tore up her garden, which was earlier rapidly installed by the Occasional-Oasis Supply Association. In another story by this author, a woman fails to take action to save her friend from a warthog who chases her up a tree, instead painting the scene in a watercolor. A character created by this author calls a woman “a regular Hunger Marcher” since “she’d go anywhere for four square meals a day.” In a story by this author, a woman pretending to be a (\*) governess teaches children history by making them reenact the Rape of the Sabine Women. An animal character created by this author causes a stir by slinging gossip at Mrs. Blemley’s party after it is revealed that Mr. Appin taught him human speech. For 10 points, name this British author of the stories “The Occasional Garden,” “The Schartz-Metterklume Method,” and “Tobermory.”

ANSWER: Saki [or Hector Hugh Munro]

<Short Fiction, WG>

9. The concentration of these objects is equal to the log of their tidal radius over their core radius in the King model. These are the smaller of the two types of objects that, due to a negative heat capacity in their core, undergo a gravothermal catastrophe. Interactions with low mass companions are a proposed solution to the second parameter problem of accurately modelling these objects’ horizontal branch morphology. The density distribution of these objects fits the (\*) Plummer sphere. Most millisecond pulsars are found in these objects, and blue stragglers are likely to form in their core. Using the spherical distribution of these objects around the Galactic Center, Harlow Shapley estimated the size of the Milky Way. These gravitationally bound objects consisting mainly of Population II stars include Omega Centauri. For 10 points, name these spherical groups of stars.

ANSWER: globular clusters [prompt on clusters; reject “open clusters”]

<Other Science: Astronomy, JS>

10. Reeves Wiedeman’s book about this company details its CEO’s failed startups making collapsible high heels and baby clothes with knee pads. Sandeep Mathrani currently leads this company, which flew 6000 employees to London for an event known as “Summer Camp.” Early funding for this company came from a group of New York City kabbalists organized by Rebekah Paltrow, who oversaw this company’s expensive private (\*) elementary education venture. This company’s former CEO cites his time in Israel as inspiration for his desire to make a series of “capitalist kibbutz.” At its peak, this company was overvalued by tens of billions of dollars thanks in large part to investments by the Masayoshi Son-run SoftBank. Former CEO Adam Neumann made billions of dollars despite the failed IPO of, for 10 points, what US commercial real estate company that provides “flexible shared workspaces?”

ANSWER: WeWork [accept WeGroup; accept WeGrow]

<Zeitgeist, TH>

11. In a study by Schiappa, Gregg, and Hewes that extends the contact hypothesis to a concept described by this adjective, subjects were rated on their prejudices concerning gay men after watching *Six Feet Under* and *Queer Eye for the Straight Guy*. Rubin, Pearse, and Powell developed a scale rating the degree of a phenomenon described by this adjective that assesses familiarity, the desire to communicate, and the perception of targets as role models. An influential 1956 paper by Donald Horton and Richard Wohl that coined this term discusses how the “simulacrum of conversation” of (\*) actors speaking into a camera leads to a situation described by this term. Contemporary discourse on fans’ interaction with celebrity personas on social media often discuss, for 10 points, what term that describes one-sided, perceived relationships?

ANSWER: parasocial relationships [or parasocial interactions; accept parasociality; accept parasocial contact hypothesis]

<Social Science: Sociology/Anthropology, TH>

12. A Thuringian third wife of a polygamous king of this dynasty spent much of a civil war collecting relics and corresponding with Venantius Fortunatus; that extremely pious wife of a member of this dynasty fled her marriage and established an abbey named for the True Cross. Several kings of this dynasty intermarried with the powerful Agilolfing family that ruled Bavaria. A queen of this dynasty attempted to kill her (\*) daughter by forcing the lid of a treasure chest onto her neck and had her romantic rival Galswintha strangled. The lives of queens of this dynasty like Saint Radegund and the murderous Fredegund are related in the *Ten Books of Histories* by Gregory of Tours. Leaders of this dynasty were tonsured after being disposed and were referred to by contemporaries as “long-haired kings.” For 10 points, name this Frankish dynasty once led by Clovis.

ANSWER: Merovingian dynasty [prompt on Franks until “Frankish” is read]

<Post-500 European History, TH>

13. The value of a function on the boundary of a disc is related to the value of the function at the origin and these points of the function by Jensen’s formula. For functions  $f$  and  $g$  that are analytic within a closed curve, if  $f$  is strictly greater on the curve, then  $f$  and  $f$  plus  $g$  have the same number of these points by Rouché’s theorem. The Weierstrass product theorem enables holomorphic functions to be constructed from sets of these points. For analytic functions, these points are always (\*) isolated. The argument principle expresses the value of a contour integral as the difference between the number of these points and the number of poles. By the intermediate value theorem, a function that changes signs in an interval must have one of these points in the interval. For 10 points, the fundamental theorem of algebra states that  $n$  of what points exist for any polynomial of degree  $n$ ?

ANSWER: zeros [or roots]

<Other Science: Math, JS>

14. Icelandic musician Hauschka uses this technique throughout *Silfra*, a 2012 collaboration album with violinist Hilary Hahn. The opening D minor, first inversion arpeggio of the “Silentium” movement of Arvo Pärt’s *Tabula Rasa* uses this technique. Maurice Delage made an early use of this technique with his 1912 piece *Ragamalika*. The two soloists make use of this extended technique in *Chôros* (“SHOW-roos”) No. 8 by Heitor Villa-Lobos. David (\*) Tudor used this technique in the original performance of *Black Mountain Piece*. Henry Cowell’s innovations in this technique influenced another composer’s pieces *Bacchanale* and *Totem Ancestor*. Eight *rasas* from Indian aesthetic tradition inspired *Sonatas and Interludes*, one of John Cage’s many pieces that uses this technique. For 10 points, name this technique that involves putting objects like cardboard and screws between the strings of a keyboard instrument.

ANSWER: prepared piano [accept preparing a piano; accept making modifications or changes to the strings of piano; accept using one’s hands on the piano strings; prompt on playing the piano]

<Classical Music, TH>

15. Because a quote about sticks and ropes being the oldest tools of mankind from a short story by this author appeared as the epigraph of a 2019 video game, postmodern video game critic Tim Rogers became the first to translate that story into English. In a play by this author, an overly friendly family moves in with a 31-year old bachelor, eventually forcing him into a cage where he becomes animalistic. After a chemist created by this author suffers a deformity-causing accident, a (\*) plastic surgeon agrees to make him a mask but warns that it will change his personality. This author of the play *Friends* wrote a novel focusing on the entomologist Niki Junpei, who is forced to have sex with the pit-dwelling and sand-shoveling title character. For 10 points, name this Japanese author who wrote *The Face of Another* and *Woman in the Dunes*.

ANSWER: Kōbō Abe [or Kimifusa Abe] (The video game is *Death Stranding*.)

<Other Literature, TH>

16. Maggie, a girl from this state, recalls having an affair with her high school English teacher Aaron in a section of Lisa Taddeo's book *Three Women*. In this state's small town of Ross, a group of Syrian and Lebanese immigrants built the oldest still-extant mosque in the United States. In 1988, a shorthanded college basketball team from a technical college in this state remarkably beat a full team from a state university, as related in the Chuck (\*) Klosterman *Grantland* article "Three Man Weave." The International United Tribes Powwow is held annually in this state, which contains the southeastern portion of the geologically-valuable Bakken Formation. The Northern Pacific Railroad weirdly attempted to attract German immigrants to this state by renaming its capital after a German statesman. For 10 points, what state contains the cities of Bismarck and Fargo?

ANSWER: North Dakota

<Geography, TH>

17. A UK court ruled that a German manufacturer of these devices, Herman Loog, could market them using the generic name of one of his competitors. In his book on how this technology made Japan's middle class, Andrew Gordon notes how this example of "Yankee Capitalism" was used an average of two hours per day in the 1950s. Non-cartel companies could pay 15 dollars to license the rights to this technology after protracted 1850s "patent wars" involving makers of these devices like Wheeler & Wilson. (\*) Pattern books used in conjunction with these devices were a staple of publications like *Mrs Beeton's*. This first mass-produced domestic appliance was improved by Elias Howe. These devices were often generically referred to as "Singers" and were driven by a foot pedal. For 10 points, name this technology that made it much faster to stitch together clothes.

ANSWER: sewing machines [or electric sewing machines; accept Singers until read]

<US History, MB>

18. A disciple of Adi Śankara (“AH-dee SHUN-kuh-ruh”) was given a name relating to these objects after he ran across a river. A physical property of these objects is often used to illustrate the concept of *vairāgya* (“vye-RAHG-yuh”), or detachment. The epithet *Pundarikāksha* (“POON-duh-ree-KAHK-shuh”), which means “one with eyes like” these objects, is often given to Vishnu, whose feet are compared to these objects by the Vedas. These objects are the primary meaning of the common male given names “Mrinal,” “Neeraj,” and “Pankaj.” When Vishnu is depicted reclining on Ādiśesha (“ah-dee-SHAY-shuh”), one of these objects is usually shown emerging from his (\*) bellybutton. When depicted upright, Vishnu often holds a discus, conch, mace, and this object, upon which Brahma (“BRUM-huh”) resides. Lakshmi is called “Padmini” since she sits on one of these objects, which name a posture in which the legs are crossed such that each foot lies on the opposite thigh. For 10 points, what hydrophobic flowers name a Buddhist sūtra?

ANSWER: lotuses [or padma; or kamala; or utpala; or ambuja; accept mrinala, neeraja, or pankaja until they are read; accept Nelumbo nucifera; accept Padmapāda; prompt on flowers; prompt on stalks or stems; anti-prompt on petals]

<Religion, AP>

19. This is the fourth and final letter in an acronym used by Michie, Van Stralen, and West to describe their model of personal interventions. Thomas Babor’s typology of alcoholism uses this letter to refer to individuals with early onset use and family histories of substance abuse. This letter represents the second step in a method of addressing irrational beliefs developed by Albert Ellis. Borderline and Narcissistic personality disorders belong to the “dramatic” cluster named for this letter in the DSM-V. In a study controversially funded by (\*) tobacco companies, cardiologist Meyer Friedman claimed that people with personalities denoted by this letter had *lower* instances of heart disease when compared to their angrier and more impatient peers. For 10 points, name the letter that denotes a low-stress, less neurotic personality type contrasted with type A personalities.

ANSWER: B [accept cluster B personality disorders; accept Type B personality; accept Babor’s Type B alcoholism; accept COM-B model; accept capability, opportunity, motivation- behavior model]

<Social Science: Psychology, TH>

20. Using a trypsin release rather than an acidic buffer reduces recovery bias in this technique. Monovalent systems for this technique use helper agents to increase the expression of wild-type proteins, thus lessening avidity effects. Derivatives of fd-tet called fUSE (“fyooz”) are “Type 3” vectors for this technique, meaning they have a single chromosome with a single gene III (“three”). Multiple rounds of affinity selection consisting of capture by immobilized selectors followed by amplification create (\*) libraries in this technique. If the protein fused into the coat protein is too large, this technique will produce poor results because agents like T4 and lambda will have reduced infectivity. For 10 points, name this technique for studying protein-protein interactions that uses viruses modified to show peptides on their surface.

ANSWER: phage display [accept antibody phage display; accept monovalent phage display]

<Biology, JS>

21. A Walter Kerr book describes how this actor differentiated himself from his peers by abandoning his Lonesome Luke persona by adopting an accessory. While aboard a tilted shipwreck, a sailor suit-clad spider monkey repeatedly telegraphs the location of a character played by this actor to a hulking murderer. This actor wore a prosthetic glove following an accident in which a prop bomb exploded in his right hand. In a film, this actor plays a waterboy who becomes increasingly dazed as he is repeatedly (\*) dogpiled by every member of two football teams. In his most famous film, this star of *The Kid Brother* and *The Freshmen* is mobbed by housewives who shower him with clothes while working at a department store that he later scales in a publicity stunt. For 10 points, name this glasses-wearing silent-era rival of Chaplin and Keaton who dangled from a large clock in his film *Safety Last!*

ANSWER: Harold **Lloyd** [accept Harry **Lloyd**]

<Other Arts: Film, TH>

22. A item from this poem is contrasted with a “Sqezy bottle” that is “misspelt / unpronounceably itself” in the Edwin Morgan poem “Not Marble: a Reconstruction.” In *Break, Blow, Burn*, Camille Paglia points out that though the first line of this poem introduces the “characters” of the artist, the artwork, and nature, the artist does not reappear for the rest of the poem. An entity in this poem rises up and “sprawled around, no longer (\*) wild” after encountering an object that is “tall and of a port in air.” An object in this poem that “does not give of bird or bush” is often read as a response to Keats’s Grecian Urn. This poem’s “gray and bare” title object makes the “slovenly wilderness / Surround that Hill” after the speaker places it “in Tennessee.” For 10 points, name this short Wallace Stevens poem about a container.

ANSWER: “**Anecdote of the Jar**”

<Poetry, TH>

## Bonuses

1. This system recognizes a broad range of bulky DNA lesions. For 10 points each:

[h] Name this system that carries out nucleotide excision repair in prokaryotes. Its A protein first acts as a damage sensor, then its B presents the lesion containing strand to be cleaved by its C protein.

ANSWER: **UvrABC** system

[e] The Uvr system was first discovered for its ability to repair dimers between two of these nucleobases. These nucleobases include uracil, cytosine, and thymine.

ANSWER: **pyrimidine** bases

[m] The DNA containing the lesion is unwound by the UvrD helicase, which is activated by MutL in this other repair pathway. MutS detects this pathway's namesake errors that cause kinks in DNA.

ANSWER: methyl-directed **mismatch** repair [or DNA **mismatch** repair; accept **MMR**]

<Biology, KN>

2. This document stated that the signees would only trade with each other and that commissions were to be set at 0.25 percent. For 10 points each:

[h] Name this document signed by twenty-four stockbrokers outside 68 Wall Street in 1792. This document is credited with establishing the trade rules for the New York Stock Exchange and is named for a tree that may never have actually existed.

ANSWER: **Buttonwood** Agreement

[e] The Buttonwood Agreement was drawn up partly to regulate the securities market after one of these events in 1792 caused wild price fluctuations and bank runs. Financial crises given this name also occurred in 1819 and 1837.

ANSWER: financial **panics** [accept **Panic** of 1792, **Panic** of 1819, or **Panic** of 1837; prompt on **depression** or **recession**]

[m] In the late 18th century, most of the stock trades in New York occurred in a Wall Street establishment of this type named for the tontine investment plan. In England, these places were nicknamed "penny universities."

ANSWER: **coffeehouse** [or **coffee shop**; accept **café**; accept Tontine **Coffee House**]

<US History, TH>

3. An article by Edward Winter on this phrase's origin describes several opportunities when it should be optimally deployed, such as "if you see that you have made a bad move." For 10 points each:

[h] Give this lexically-obsolete French phrase that is generally required to be said in order to circumvent the touch-move rule. In one unsavory event, Milan Matulović successfully used this phrase to retroactively reverse a losing move, resulting in his humorous nickname "[this phrase]-ović."

ANSWER: "**j'adoube**" ("**zhuh-DOOB**") [prompt on "**I adjust**"] (The verb *adouber* has disappeared from nearly all French dictionaries, and is rarely seen in contexts other than this one.)

[e] At the 2015 FIDE World Cup, Hikaru Nakamura got away with illegally using both hands to perform this move. This move that can be performed kingside or queenside is used to protect your king and activate your rook.

ANSWER: **castling** [or **castle**; accept kingside **castling** or queenside **castling**]

[m] *Description acceptable.* While blunders in chess are humorously annotated with a pair of question marks, two exclamation marks are used to label excellent moves, such as Bobby Fischer's choice to perform this action via Be6 ("**bishop to e six**") on move 17 of the "Game of the Century."

ANSWER: **sacrificing** his **queen** [accept synonyms for **sacrificing**, such as **giving up** or **offering**; prompt on just **sacrificing** by asking "what piece?"]

<Other Academic, TM>

4. Answer the following about frightening primates in literature, for 10 points each:

[e] An “Ourang-Outang” turns out to have committed a bizarre locked room murder in this story by Edgar Allan Poe.

ANSWER: “The **Murders in the Rue Morgue**”

[m] A shriveled appendage of a monkey grants wishes at an ironically morbid cost in a story by this English ghost story writer collected in *The Lady of the Barge*.

ANSWER: W. W. **Jacobs** [or William Wymark **Jacobs**] (The story is “The Monkey’s Paw.”)

[h] A ruthless monkey demon haunts Gnossos Pappadopoulis in this cult classic counterculture campus novel by Richard Fariña. In this novel, several hippie students from upstate New York participate in a bizarro version of the Cuban Revolution.

ANSWER: **Been Down So Long It Looks Like Up to Me**

<Other Literature, TH>

5. This document argued for the right of the peasantry to appoint and depose community pastors and for the abolition of the *Todfall* death tax. For 10 points each:

[m] Name this numbered set of demands widely distributed by German peasants from Swabia during the 1525 German Peasants’ War.

ANSWER: “The **Twelve Articles** of the Swabian Peasants”

[e] This writer rejected the Twelve Articles and the motivations of the German Peasants’ War in general in his tract *Against the Murderous, Thieving Hordes of Peasants*. This reformer earlier attacked the Catholic Church in the *Ninety-five Theses*.

ANSWER: Martin **Luther**

[h] Luther also opposed this group of Anabaptists influenced by Thomas Müntzer. This group, which included Thomas Dreschal and Nicholas Storch, believed themselves to receive messages directly from God.

ANSWER: **Zwickau prophets** [accept **Zwickauer Propheten**; accept **Zwickauer Storchianer**]

<Post-500 Euro History, GP>

6. John Hicks’s theoretical treatment of these events argues that they are not Pareto optimal, since either one side is trying to maintain a “reputation for toughness” or there is information asymmetry between the parties. For 10 points each:

[e] Name these labor disputes in which work is halted to leverage a bargaining position for higher wages. According to Hicks’s model, these events end when the employer’s concessions curve and union’s resistance curve intersect.

ANSWER: labor **strikes** [accept **strike** action]

[m] Wage bargaining during labor strikes can be modeled using this type of fair division problem introduced by Hugo Steinhaus. Divisions in this class of problems are considered envy-free if each division is considered at least as good as all the others.

ANSWER: fair **cake-cutting** [accept fair **pie-cutting**; accept envy-free **cake-cutting** or **pie-cutting**]

[h] Marceau and Musgrave’s escrow model of statutory strikes suggests that workers should continue to work to avoid shrinking the total cake during strike negotiations, with the employer paying fines through this type of procedure. These sealed-bid procedures promote truthfulness by using “second-price” mechanisms.

ANSWER: **Vickrey auctions** [prompt on **auctions**]

<Social Science: Economics, TH>

7. This composer's impressive improvisation skills are attested by an incident in which he traded a theme back and forth with the viol player André Maugars during a Mass presided over by his patron Pope Urban VIII. For 10 points each:

[h] Name this Ferraran organist at St. Peter's for the first half of the 17th century, who popularized the toccata with his keyboard collection *Fiori musicali*. He published over one hundred variations on then-new courtly dances in his *Cento partite sopra passacagli*.

ANSWER: Girolamo **Frescobaldi**

[m] Frescobaldi's *Cento partite* includes forty variations on this originally fast, syncopated dance in triple meter that was imported to Italy and Spain from the New World. This non-passacaglia dance evolved into a typically slow genre with a lament bass used in the fifth movement of Bach's partita No. 2 for solo violin.

ANSWER: **ciaconna** [or **chaconne**; accept *Partita No. 2 Chaconne*]

[e] Frescobaldi's keyboard music is considered a bridge between Renaissance music and that of this era in which Georg Frideric Handel wrote all his music.

ANSWER: **Baroque** era

<Classical Music, TH>

8. C. S. Peirce's ("purse's") philosophy inspired Clara Fernández-Vara's paper on indexical storytelling in video games. Answer the following about games discussed in that paper, for 10 points each:

[m] This game uses traces revealed directly through gameplay to tell the story of the game world. In this 1993 adventure-puzzle game, the player must work strange contraptions while learning of two brothers who were stuck in two different magic books.

ANSWER: **Myst**

[e] This series's codec system is used as an example of how tutorial signage, while useful, breaks player immersion. In this game series, a red exclamation mark appears if enemies notice Solid Snake hiding in a cardboard box.

ANSWER: **Metal Gear Solid** [accept **MGS**]

[h] Performing this action in *Colossal Cave Adventure* to distinguish between rooms of the maze is one way in which players can create indices of their own. This action is necessary to map out the maze since each room is only described with the message "You are in a maze of twisty little passages, all alike" otherwise.

ANSWER: **dropping** items [accept answers that describe **leaving behind** items in a room]

<Pop Culture, JS>

9. Following a theft in this play, the wheelchair-bound Horace plans to re-write his will, but then dies of a heart attack as his wife watches. For 10 points each:

[m] Name this play in which Union Pacific bonds are stolen from a safe-deposit box by Leo. In this play, Regina ends up blackmailing her brothers Ben and Oscar Hubbard.

ANSWER: *The **Little Foxes***

[e] This radical author derided the aristocracy of the post-Reconstruction South in her plays *The Little Foxes*, *The Autumn Garden*, and *Toys in the Attic*.

ANSWER: Lillian **Hellman** [or Lillian Florence **Hellman**]

[h] *Description acceptable*. After Regina secures ownership of her family's cotton mill, *The Little Foxes* ends with Regina's daughter promising to leave, telling her mom that she won't stand around and watch her perform this specific action. Earlier, the servant Addie said that the Hubbard family does this, "like in the Bible with the locusts."

ANSWER: **eating** the **Earth** [accept **eating** the **world**; prompt on **eating** by asking "eating what?"]

<Drama, JS>

10. The speaker of this Psalm says he is “a worm, not a man, scorned by men, despised by the people” and complains that God does not answer his prayers. For 10 points each:

[h] Give the number of this Psalm. Its opening verses are rendered into Aramaic as “Eloi, Eloi, lema sabachthani?” by Jesus at the time of his death in Matthew and Mark.

ANSWER: Psalm **22** [accept **21** due to different numbering systems in the Septuagint]

[e] “Eloi, Eloi, lema sabachthani?” is most commonly translated as this question in English. This is the fourth of the sayings of Jesus on the cross and is problematic to interpret because it implies that Jesus feels deserted by God.

ANSWER: “My God, my God, **why have you forsaken me?**” [accept equivalents in archaic language like “**thou**” instead of “you” and “**hast**” instead of “have”; accept “**abandoned**” or other synonyms for “forsaken”; prompt on partial answers]

[m] In his book *Jesus of Nazareth*, this theologian analyzed the parallels between Psalm 22 and the Passion narrative and argued that Psalm 22 foreshadows the institution of the Eucharist. This theologian wrote the influential 1968 book *Introduction to Christianity and the encyclical Deus caritas est*.

ANSWER: **Benedict XVI** (“the sixteenth”) [or Joseph Aloisius **Ratzinger**]

<Religion, MJA>

11. Data from NOAA Atlas 14 is imported to make these diagrams used by civil engineers to design stormwater drainage systems. For 10 points each:

[h] Name these diagrams that depict the relationship between their three namesake quantities. They often have units of minutes on the x-axis and units of inches per hour on the y axis.

ANSWER: **intensity-duration-frequency** curves [accept **IDF** curves]

[e] The first step of designing a storm drainage system involves finding this area using a topological map. This area is defined such that rainwater falling anywhere within its boundaries eventually drains to the same outlet.

ANSWER: **watershed** [accept drainage **basin** or stormwater **basin**; accept **catchment** area, **catchment** basin, or **impluvium**]

[m] For a given watershed outlet, engineers must calculate this quantity, denoted capital Q. In the rational method, this quantity equals storm intensity times watershed area times an empirical constant.

ANSWER: **runoff** [accept maximum **runoff**; accept **runoff** rate; accept **runoff** volume; prompt on volumetric **flow** rate]

<Other Science: Engineering, TH>

12. In 2002, this organization criticized the Academy Awards by creating a poster depicting “The Anatomically Correct Oscar,” noting that “he’s white & male, just like the guys who win!” For 10 points each:

[m] Name this collective of anonymous artists who produced the satirical poster “The Advantages of Being a Woman Artist.”

ANSWER: **Guerrilla Girls**

[e] In a 1989 poster, the Guerrilla Girls depicted a woman in a gorilla mask and posed the question “do women have to be” in this state “to get into the Met?” Titian’s *Venus of Urbino* depicts a woman in this state.

ANSWER: **naked** [accept **nude**; accept **undressed**; accept clear knowledge equivalents indicating that the person is **not** wearing **clothes**]

[h] The Guerrilla Girls’ *Bedside Companion to the History of Western Art* highlights the quilting work of this former slave from Georgia who has only two known surviving works, *Bible Quilt 1886* and *Pictorial Quilt 1898*.

ANSWER: Harriet **Powers**

<Painting/Sculpture, WG>

13. After hearing of a sack of this city, Honorius was more concerned with the well-being of his pet chicken, which was named after this city. For 10 points each:

[e] Name this “eternal city” whose sack by the Visigoths under Alaric destroyed the mausoleums of Augustus and Hadrian.

ANSWER: **Rome**

[m] This general and regent for Honorius defended Rome from an invasion by Radagaisus and sent Sarus to deal with the revolt of Constantine III. This part-Vandal general may have been executed by Honorius for his failure to prevent Alaric’s sack of Rome.

ANSWER: Flavius **Stilicho** [or **Stilicho** the Vandal]

[h] Stilicho sent Mascezel to deal with this Berber general’s rebellion in Mauritania. This Governor of Africa and brother of Mascezel led forces that intercepted grain ships heading to Rome.

ANSWER: **Gildo**

<Ancient History, GP>

14. This figure is described as “sitting on an Ivory throne she found, / Drawne of two steeds, th’one black, the / other white,” before a long digression tells the story of Diana punishing Faunus. For 10 points each:

[h] Name this Titaness who challenges the authority of Jove in a trial on Arlo’s Hill overseen by Gaia. The two cantos that describe her are probably fragments of the unfinished Book VII of a longer poem.

ANSWER: **Mutability** [or **Mutabilitie**; accept the goddess or titaness from the **Mutabilitie** Cantos]

[e] The Mutabilitie Cantos were likely intended as part of this long poem by Edmund Spenser that includes characters like the Redcross Knight, Una, and Gloriana.

ANSWER: *The **Faerie Queene***

[m] During the debate between Mutability and Jove, a procession of personifications of these things is described in detail, with one riding a crab and another drawn in a cart by two fish. Each of the sections of another Spenser book of eclogues featuring the shepherd Colin Clout is named after these entities.

ANSWER: the **months** of the year [prompt on the zodiac signs or constellations; prompt on calendars]

<Poetry, TH>

15. In the path integral formalism, these Green’s functions receive contributions of the exponential of  $i$  times the action over  $\hbar$ . For 10 points each:

[m] Name these functions named for the fact that the wave function at a later time is given by the convolution of the initial wave function and one of them.

ANSWER: **propagators** [accept, but DO NOT REVEAL, Feynman **propagators**]

[e] In these pictures, a propagator factor is associated with each internal line, but not any external lines because they are not on-shell. Photons are wavy lines in these pictures used to calculate scattering amplitudes.

ANSWER: **Feynman** diagrams

[h] Because the naive Feynman propagator has a pole, it is integrated above or below the pole by adding this two-term factor to the denominator, as prescribed by Feynman. Whether or not this factor is positive or negative determines whether the selected propagator is the retarded Green’s function or the advanced Green’s function.

ANSWER:  **$i$  times epsilon** [or  **$i\epsilon$** ]

<Physics, LL>

16. The name for this moral stance is derived from a Hume passage on the mind's "propensity to spread itself over external objects" and has been promoted by Simon Blackburn. For 10 points each:

[h] Name this pseudo-realist metaethical position that states that, instead of simply identifying situations as right or wrong, individuals extend their internal moral intuitions to the world at large to make judgements. Emotivism and error theory are subtypes of this position.

ANSWER: moral **projectivism** [accept **expressivism**; accept, but DO NOT REVEAL, Lockean **projectivism**; prompt on **non-cognitivism**]

[m] Error theory, which states that our moral projections onto the world do not correspond to any reality, was first described by this thinker's *Ethics: Inventing Right and Wrong*, which also included his Argument from Queerness.

ANSWER: J. L. **Mackie** [or John Leslie **Mackie**]

[e] John MacDowell promoted a different form of projectivism named for this thinker, which states that the goodness of an object is a secondary quality. This philosopher made the metaphysical distinction between primary and secondary qualities in his *Essay Concerning Human Understanding*.

ANSWER: John **Locke** [accept **Lockean** projectivism]

<Philosophy, TH>

17. Two drum sets, a *qanun*, and rapidfire konnakol syllables are all featured on this musician's single "Drip," recorded with Christiane Karam's Middle Eastern Fusion Ensemble at Berklee. For 10 points each:

[h] Name this Armenian jazz pianist whose highly rhythmic style has been compared to djent. Both prog metal and the folk music of his native Gyumri inspired many of the songs on his albums *Mockroot* and *Shadow Theatre*.

ANSWER: Tigran **Hamasyan**

[m] In his piece "Nairian Odyssey," Hamasyan transitions from a slower tempo to a faster one, based on groups of four five-lets at the previous speed, which exemplifies this rhythmic concept. This concept is named in analogy to a harmonic concept in which the tonal center changes.

ANSWER: **metric modulation** [accept **tempo modulation**; prompt on **proportional tempi**; prompt on **modulation**]

[e] "Nairian Odyssey" also features Tigran's self-accompaniment via this technique. This form of vocal percussion uses various mouth-noises to emulate the sounds of classic drum machines.

ANSWER: **beatboxing** [accept **b-boxing**; prompt on **mouth drumming**; reject "scat" or "scatting"; reject "acapella"]

<Other Arts: Auditory, TM>

18. A mandate for a six kilometer radius from a central volcano led to the growth of a forest with a perfectly circular treeline in this country's Egmont National Park. For 10 points each:

[e] Name this Southern Hemisphere country called *Aotearoa* in the Māori language.

ANSWER: **New Zealand**

[h] Due to negotiation of the Māori with the New Zealand government, the forested region of Te Urewera has this unusual status, also possessed by the Whanganui River.

ANSWER: they are legally **people** [accept they are legal **persons**; accept they possess **human right**; accept having a distinct **legal identity**; accept having **personhood**]

[m] The banks of the Whanganui River are a major nesting location for the whio, a "blue" type of this bird found on the ten-dollar New Zealand banknote. A common species of these birds native to Latin America is misleadingly named for Muscovy.

ANSWER: **ducks** [accept blue **duck**; accept Muscovy **duck**; prompt on **Anatidae**]

<Geography, TH>

19. This molecule was first synthesized in sizable yields by Schleyer through the aluminum chloride-catalyzed rearrangement of *endo*-tetra-hydro-di-cyclo-penta-diene. For 10 points each:

[h] Name this diamondoid molecule considered hypothetical until its isolation from petroleum by Landa et al., a team of Czech chemists.

ANSWER: **adamantane** (“aa-dah-MAN-tayn”)

[e] Adamantane is a remarkably strain-free molecule composed of three fused rings of this cyclic molecule. This molecule can undergo intramolecular E2 reactions when in its chair conformation.

ANSWER: **cyclohexane** [or **C6H12**]

[m] Syntheses by ring closure of adamantane proceed by inserting a bridge containing this many carbon atoms into a bi-cyclo-nonane-dione diester named for Meerwein. Groups containing this many carbons are added in homologations.

ANSWER: **one** (The first clue refers to a methylene bridge.)

<Chemistry, JS>

20. The title character of a novel learns that his friend Paul Riesling shot his wife Zilla in the arm on the same day he is elected vice-president of this organization. For 10 points each:

[h] Name this organization whose badge that character proudly wears every day. That character’s middle name is revealed to be “Follansbee” at a luncheon hosted by this organization, for which he later gives a speech about being an “Ideal Citizen.”

ANSWER: the Zenith **Boosters**’ Club [accept any answer involving a club or organization for **boosting** businesses; accept, but do not otherwise reveal the **Booster** Club from *Babbitt*]

[e] The title materialistic real estate agent of this Sinclair Lewis novel flaunts his vice presidency of the Booster’s Club of Zenith.

ANSWER: **Babbitt**

[m] *Babbitt* has been analyzed through the lens of Thorstein Veblen, who is compared to Socrates in “The Bitter Drink,” a biographical passage from this series by a contemporary of Lewis’s. The “Body of an American” sketch in this series smashes together dozens of words about the military funeral of “John Doe.”

ANSWER: **U.S.A.** trilogy [prompt on *The 42nd Parallel*, *1919*, or *The Big Money* by asking “what larger series is that work a part of?”] (by John Dos Passos)

<Long Fiction, AP>

21. The penates (“pi-NAY-teez”), household gods of the cupboards and kitchen supplies, were often invoked along with this Goddess. For 10 points each:

[e] Name this Roman goddess of the hearth and family. A group of similarly named virgins maintained an ever-burning fire at her temple in the Roman Forum.

ANSWER: **Vesta** [accept **Vestal** Virgins]

[m] These guardian deities of the Roman religion are sometimes conflated with the penates. The *familiaris* type of these deities were ceremonially greeted upon arrival and departure of houses, while their public types were invoked at crossroads.

ANSWER: **lares** [accept **lares familiares** or domestic **lares**]

[h] According to Varro, a group of household deities including Subigus, Prema, and Pertunda assisted in this specific activity, which usually occurred after a minor deity called Domiducus led an individual home from a public event.

ANSWER: a wife **losing** her **virginity** [accept **consummation** of a marriage; accept equivalents indicating a woman having **sex** for the **first time** in a house; prompt on **marriage**]

<Mythology, TH>

22. Much of this kingdom's early history is considered legendary as its *pantun* oral historians were required to be blind and were mostly illiterate. For 10 points each:

[h] Name this early Hindu kingdom on the western part of Java that lasted from the 7th to the 16th century. Much of what we know about this kingdom derives from inscriptions buried at the royal capital of Pakuan Pajajaran.

ANSWER: **Sunda** Kingdom [or **Karajaan Sunda**]

[m] The Sunda Kingdom declined after its defeat at the 1357 Battle of Bubat by this larger Hindu kingdom that held territory from the Philippines to Thailand. This maritime empire reached its zenith under Gajah Mada, who turned the Bali Kingdom into a vassal state.

ANSWER: **Majapahit** Empire

[e] Both the Sunda and Majapahit peoples built examples of these objects that used rattan rigs and held *warastra* cannons. Chinese examples of these objects with fully battened sails were called junks.

ANSWER: **ships** [accept **boats**; accept junk **ships**]

<World History, ZF>