

2022 ARCADIA □

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Packet 10: You know, if killer whales could walk, I'm sure they could've become our rivals

Tossups

1. **This technology is set to be used by KVS in Norway and sees.ai (“sees-dot-A-I”) in the United Kingdom to manage their countries’ energy grids. One company has patented “multi-level fulfillment centers” for a service using these devices that it is testing in Lockeford, California. Zipline, a company specializing in this technology, serves remote Rwandans in need of blood transfusions. The Turkish company (*) Baykar supplied Azerbaijan with the Bayraktar brand of these devices during the Nagorno-Karabakh War. Quadrotor configurations are commercially popular in these devices. These devices were used in 2022 to assassinate ‘Ayman az-Zawāhirī. Barack Obama was heavily criticized for his weaponization of this technology in strikes in Pakistan and Somalia. For 10 points, name these pilotless aircraft.**

ANSWER: drones [or unmanned aerial vehicles or UAVs; accept drone strikes]

<AS, Current Events>

2. **In one novel, a one-legged man recalls how this group bizarrely forced his cellmate’s cousin to add pants to dozens of flamingo paintings. A member of this group is identified in a soccer stadium by “John Lennon sunglasses” and is later hit in his “bloodshot blue eyes” by a slingshot. A woman is executed by this group after she kills her abusive husband with a shovel; that woman, Mariam, does so to save (*) Laila. A half-German member of this group named Assef sexually abuses the orphan Sohrab in a novel in which Hassan is shot by members of this group after refusing to allow them to confiscate Baba and Amir’s house. An education activist is shot by members of this group in a 2013 memoir by Malala Yousafzai. For 10 points, name this group that, in Khaled Hosseini’s *The Kite Runner*, takes over Afghanistan.**

ANSWER: Taliban [or Talib]

<AS, World Literature>

3. **In *Never in Anger*, Jean Briggs discusses how parents of this ethnicity encourage their children to hit them with stones to teach anger management. A culture-bound syndrome of this ethnicity has drawn skepticism as resulting more from European explorers than the supposed hysteria of these peoples’ women. That syndrome is called piblokto. A kinship system named for this ethnicity emphasizes the nuclear family and is used in the (*) United States and Europe today. People of this ethnicity whose sex is observed to change from male to female at birth called *sipiniit* often serve as *angakkuq* shamans. Kayak angst, named after these peoples’ traditional boats, is a form of loneliness observed among seal hunters of this ethnicity. For 10 points, name these indigenous peoples of the Alaskan, Canadian, and Greenlandic Arctic.**

ANSWER: Inuit [accept Iñupiat or Inuvialuit or Kalaallit or Inughuit or Tunumiit; accept Utkuhiksalingmiut; accept Inuit kinship; accept Greenlandic Inuit until “Greenlandic” is read; prompt on Eskimos or Eskimo kinship but politely note that it is a derogatory term; reject “Yup’ik” or “Yupitit”; reject “Alutiiq” or “Alutiit” or “Aleut”; reject “Unangan”; reject “Innu”] (*Sipiniit* are considered men with female genitalia. “Kayak” comes from the Inuktitut *qajaq*.)

<AS, Social Science>

4. **In April 2021, Chandra made the first detection of X-ray emissions from this object. A thermal boundary may explain this object’s anomalously low luminosity, which indicates that it has near zero thermal flux. This**

object's magnetosphere is offset from its center by about one-third of its radius, causing its auroras to rotate around its poles. This object's magnetotail twists into a long corkscrew. This object is the furthest in the Solar System that obeys the (*) Titius-Bode Law. Voyager 2's flyby of this planet imaged its zeta ring, the innermost of its 13, as well as the deep canyons on its moon Miranda. The poles of this planet receive around 42 years of continuous sunlight per revolution due to its axial tilt of 98 degrees. For 10 points, name this icy giant discovered by William Herschel, the seventh from the sun.

ANSWER: Uranus

<BW, Other Science: Astronomy>

5. In “pocket houses,” older members of this ethnic group slept on the south wall and younger members slept on the north wall in heated brick beds. This ethnic group forcibly employed servants called *booi aha* (“boy AH-khah”), and one of its leaders issued the Seven Grievances. As a reward for his defection at the Battle of Fūshùn (“foosh-WUN”), a general married into this ethnic group's Aisin-Gioro (“eye-SHEEN ghee-OH-ro”) family. After Wú Sānguì (“SONG-gway”) opened up the (*) Shānhǎi Pass, this ethnic group destroyed a short-lived state led by the “dashing prince” Lǐ Zichéng (“lee DZEE-chung”). The *qípáo* (“CHEE-pow”) originated from this ethnic group, which enforced a long, braided hairstyle called the queue. Nurhaci (“noor-HAH-chee”) organized this ethnic group into the Eight Banners, which supported rulers like the Kāngxī (“KONG-shee”) Emperor. For 10 points, name this ethnic group that founded the Qīng dynasty.

ANSWER: Manchu [or Mǎnzú or Manchurians; accept Jurchens]

<GE, World History>

6. This play's protagonist offers to let a guest stay the night in one of the three empty nurseries in his house. One character in this play reminds another of his promise to carry her off “like a troll” to a kingdom in Spain or “some such place.” A fire that destroyed “nine lovely dolls” caused a fever in the breastfeeding wife of this play's protagonist that killed their infant sons. This play's protagonist ends his relationship with (*) Kaia after expressing fear of the “younger generation” represented by her fiancée Ragnar. This play's protagonist promises to build a “castle in the air.” Hilda Wangel convinces this play's protagonist to place a wreath upon a church steeple, causing him to fall to his death. For 10 points, name this Henrik Ibsen play about the architect Halvard Solness.

ANSWER: *The Master Builder* [or *Bygmester Solness*]

<GP, European Literature>

7. A goodwill trip that this person made with Georges Raveret to establish schools in Egypt helped popularize Taha Hussein among Western audiences. John Macy inspired this person to write the essay collection *Out of the Dark*. This person wrote that “the Socialist party was too slow” in dealing with how “poverty drove women to a life of shame” in the essay “Why I Became an IWW.” This co-founder of the ACLU promoted the Talking Books programs. Alexander Graham (*) Bell helped this person attend the Perkins Institute and learn the Tadoma method. Marsha Washington treated this Alabama native after a scarlet fever or meningitis case as a child. This person was taught the word “water” by Anne Sullivan's spelling letters in her hand. For 10 points, name this blind deaf activist.

ANSWER: Helen Keller [or Helen Adams Keller]

<GE, American History>

8. For a 2018 revival, Catherine Zuber costumed this musical's protagonist in shades of blue and used lilac for a scene originally staged in black-and-white costumes. A rising C-major arpeggio followed by two B's is sung on the title of this musical's most famous number, which opens with the lyrics “Bed, bed! I couldn't go to bed!” This musical's original production was replicated for a 60th-anniversary production directed by (*) Julie Andrews, who originated the role of a character in this musical who sighs that it would be “oh so lovely sittin' abso-bloomin'-lutely still.” That character in this musical sings “I Could Have Danced All Night” to express her

exhilaration at being able to pronounce English without a Cockney accent. For 10 points, name this Lerner and Loewe musical about Eliza Doolittle, based on *Pygmalion*.

ANSWER: *My Fair Lady*

<IZ, Other Arts: Auditory>

9. Richard Holden and Anup Malani proposed the use of blockchain to ensure that one type of this practice is unobservable and simultaneous between parties, thus avoiding the hold-up problem. According to the Fisher separation theorem, a firm's decision to partake in this practice is independent of its owner's preferences. Dale Jorgenson's theory of this practice claims that a firm seeking to maximize net worth is constrained by the rate of growth of (*) capital stock, calculated as this practice minus replacement. An increase in government borrowing may lead to "crowding out" of this practice in the private sector. Harry Markowitz measured individuals' risk-aversion to this practice in the modern portfolio theory. For 10 points, name this act of purchasing and holding a security in anticipation of a future return.

ANSWER: investment [prompt on purchasing until read; reject "financing"]

<GP, Social Science>

10. The synthesis of the "Western" half of a complex of this metal had a key intermediate called *corrin-sterone*. An alloy of this non-titanium metal with chromium is a common material for bone implants. This element is crucial for organizing the cyclization event of a *seco*-corrin ring in Woodward and Eschenmoser's 12-year total synthesis of a coordination compound of this metal. Alfred Werner pioneered coordination chemistry by proposing the octahedral structure of a (*) hexammine complex of this metal. The conversion of homocysteine to methionine requires a cofactor that contains this metal, which binds to an intrinsic factor protein. Dorothy Hodgkin identified the corrin ring that surrounds this metal in a vitamin whose deficiency causes pernicious anemia. For 10 points, name this ferromagnetic metal at the center of vitamin B12, which is in many blue pigments.

ANSWER: cobalt [or Co]

<VD, Chemistry>

11. Contemporary nationalists have used this polity's expansionary "red apple" myth to promote irredentism. To form this polity's standard, the motto "until it fills the world" was added to an object dreamt by its founder. A foundational myth of this polity stems from that dream about a moon entering the chest of one ruler and sprouting a tree. Paul Wittek failed to explain this polity's expansion with the (*) Ghaza thesis. This polity divided newly conquered territory into semi-independent sanjaks. This polity exchanged fiefs called *timar* for military service with *sipahi* cavalymen. This empire, which practiced *devshirme* ("*dave-SHEER-may*") in the Balkans, possibly adopted the crescent symbol from the earlier Byzantines. For 10 points, name this empire ruled by sultans like Osman I.

ANSWER: Ottoman Empire

<AS, European History>

12. A family of these proteins with a prenylated C-terminal tail binds tether factors to match v- and t-SNAREs during membrane fusion. An amphipathic helix embeds one of these proteins into the ER membrane to initiate COPII ("*cope-two*") coat assembly. The pertussis and diphtheria toxins ADP-ribosylate one of these proteins. This family includes a protein which drives a cycle that traffics importins and exportins into and out of the nucleus. (*) Small monomeric proteins of this type are contrasted with large heterotrimeric ones. These proteins can cause phospholipase C to produce DAG and IP3 or adenylyl cyclase to produce cAMP during signal transduction cascades. These proteins can be coupled with a class of seven transmembrane helix-containing receptors. For 10 points, name these molecular switch proteins that bind and hydrolyze a guanine-containing nucleotide.

ANSWER: G proteins [or GTPases; accept guanine nucleotide-binding proteins; prompt on Sar1 or EEF2 or eukaryotic elongation factor 2 or Rab family or Ran family or Ras family by asking, “To what broader class of proteins does that protein belong?”; reject “G-protein-coupled receptors” or “GPCRs”]
<JE, Biology>

13. A painting depicting this man was inspired by the “Sweetness of Revenge” section of *Antar*. A museum curator jumped in front of a train upon hearing that an icon painter cried “Enough of the bloodshed!” and attacked a painting that depicts this man. A building commissioned by this man resembles an eight-pointed star and includes a ninth chapel dedicated to the Intercession. In 2018, a drunk man with a pole damaged a figure who is being held by this man on a red carpet near a staff in a (*) Tretyakov Gallery painting. This man appears terrified as he attempts to stop blood flowing from his son’s head in an Ilya Repin painting. For 10 points, name this man who patronized and blinded the architect of St. Basil’s Cathedral as Tsar of Russia.

ANSWER: Ivan the Terrible [or Ivan IV Vasilyevich; accept Ivan the Terrible and His Son Ivan; prompt on Ivan or Ivan Vasilyevich]
<GE, Visual Arts>

14. A woman in this novel is reminded of the smell of the beach at St. Tredennick and screams when she feels wet seaweed touch her neck. A man in this novel marks his forehead with red mud to symbolize the mark of Cain when he fakes his death. Grey knitting wool and a red oilsilk curtain go missing in this novel, in which a woman notices that her room has a white marble clock shaped like a bear. After a woman drags a doctor’s corpse past the high tide (*) water mark in this novel’s climax, she pickpockets a man’s revolver and shoots him. After the ex-governess Vera Claythorne hangs herself in this novel, Justice Wargrave reveals that he had orchestrated the plot to kill ten murderers on Soldier Island, which is owned by U. N. Owen. For 10 points, name this mystery novel by Agatha Christie titled for the last line of a racist nursery rhyme.

ANSWER: And Then There Were None
<CM, British Literature>

15. The second edition of the *Principia Mathematica* begins by defining propositions named after these objects, which are essentially n -adic relations. In the original Ogden translation of Wittgenstein’s *Tractatus*, *Sachverhalte* is translated as this kind of “fact,” rather than the now-standard “states of affairs.” Russell’s analysis of language into metaphysically-basic “simples” is described as a “logical” form of a viewpoint centered on these objects. A Stephen Greenblatt book about a property of these objects traces the preservation of a copy of (*) *De rerum natura*. Epicurus believed that free will was explained by a *clinamen*, or “swerve,” of these objects. For 10 points, Democritus’s natural philosophy describes the universe as made of what indivisible components?

ANSWER: atoms [accept word forms such as atomic fact; accept logical atomism]
<VD, Philosophy>

16. The phrase “and now it is waste” repeatedly appears in a text commissioned by this ruler, leading historians to question whether it refers to war-torn or untaxed areas. Bleddyn ap Cynfyn joined with Edric the Wild to attack this ruler’s holdings at Hereford. After the death of William Walcher, this ruler invaded Northumbria for the second time. This ruler demanded loyalty from all tenants-in-chief and subtenants in the Oath of Salisbury. An Archbishop of Canterbury named (*) Stigand stands next to this ruler in one depiction commissioned by his half-brother Odo. Some accounts claim that this ruler won a battle after his enemy commander took an arrow to the eye. This ruler began the “Harrying of the North” after defeating Harold Godwinson at the 1066 Battle of Hastings. For 10 points, name this first Norman king of England.

ANSWER: William I [or William the Conqueror or William the Bastard; prompt on William] (The phrase “and now it is waste” is appended to numerous manors in the *Domesday Book*. Stigand appears next to William in the *Bayeux Tapestry*.)

<GP, Other History: British>

17. This phrase is described as demonstrating “mournful and never-ending remembrance” in an essay that praises this phrase for being “sonorous and susceptible to emphasis.” The speaker of a poem feels “perfumed from an unseen censer” and begs to “quaff this kind nepenthe” after hearing this phrase, which was rendered as the same two-word translation by both Stéphane Mallarmé and (*) Charles Baudelaire. The essay “The Philosophy of Composition” recounts a poet’s choice to use this phrase repeatedly in a poem set in “bleak December.” In that poem, this phrase answers questions like “is there balm in Gilead?” by a character who sits atop a “bust of Pallas.” For 10 points, give this chilling single-word refrain spoken by the title character of Edgar Allan Poe’s “The Raven.”

ANSWER: “nevermore”

<HG, American Literature>

18. At a cult site dedicated to this deity, trespassing humans were unable to cast shadows and cursed to die within a year. A fiery flash emerging from a cave marked the annual rebirth of this deity as a youthful vegetation deity syncretized with the god Velchanos. The consumption of animal and human entrails at a cult site to this god on Mount Lykaion transformed a human into a wolf for nine years. (*) Dione (“dye-OH-nee”) acted as this god’s consort at a site where priests listened to the rustling of oak leaves to hear his divinations. The Kouretes banged their shields to hide this god as he was fed by Amalthea. The Eleans commissioned Phidias to create a large chryselephantine statue of this god, who was born within Mount Ida’s Psychro Cave on the island of Crete. For 10 points, name this patron god of Dodona and Olympia, the king of the Greek gods.

ANSWER: Zeus [accept Zeus Velchanos or Zeus Lykaaios]

<KT, Beliefs>

19. Gell-Mann, Oakes, and Renner estimated the size of one instance of this process in QCD by relating the pion masses to the quark condensate. In a 2016 experiment that placed 10 ytterbium ions in a line and periodically drove them, this process led to the formation of a time crystal. In some versions of this process, fluctuations of a nonzero vacuum expectation value are called (*) Nambu-Goldstone bosons. Landau theory describes how this phenomenon occurs in continuous phase transitions, as seen in the loss of isotropy in the ferromagnetic transition. The Higgs mechanism describes how this process generates the mass of the W and Z bosons. For 10 points, name this process which can be “spontaneous” and describes a system’s loss of the mathematical property of being invariant under certain transformations.

ANSWER: symmetry breaking [accept spontaneous symmetry breaking; accept chiral symmetry breaking]

<RA, Physics>

20. Note to players: this tossup is asking for a specific piece or group of pieces, not a genre. In 2022, Elena Urioste and the Chineke! Orchestra premiered a version of these pieces with a “grittier, punk rock sound.” Analog synthesizers play in a tenth-anniversary “software update” to a postmodern rendition of these pieces whose British composer discarded 75% of them. Jean-Jacques Rousseau transcribed one of these pieces for solo flute. In the slow movement of the first of these pieces, an eighth note and quarter note comprise an unreferenced *sempre forte* viola motif. Muted strings and *brisé* (“bree-SAY”) (*) harpsichord play the only movement in these pieces that lacks a melody, which follows a “Dance and Song of the Peasants.” Max Richter “recomposed” these pieces, which Francesco Geminiani derided for imitating birdsong. These concerti were published with accompanying sonnets. For 10 points, name these concerti that open *The Contest Between Harmony and Invention*, by Antonio Vivaldi.

ANSWER: The Four Seasons [or *Le quattro stagioni*; prompt on *The Contest Between Harmony and Invention* or *Il cimento dell’ armonia e dell’ inventione* until read] (Both the recomposition and “software update” are by Richter.)

<JE, Auditory Arts>

Bonuses

1. The Education Amendments of 1972 expanded this federal law to protect women working in professional roles. For 10 points each:

[10m] Name this repeatedly-amended law whose passage during the New Deal limited the maximum workweek to 44 hours and prohibited those under 18 from performing hazardous work such as mining and meat processing.

ANSWER: **Fair Labor Standards Act** [or **FLSA**]

[10h] The FLSA was extended to state and local governments by Joe Garcia's lawsuit against this city's transit authority. A high school student in this city who was charged with a federal crime for bringing a handgun to school was the defendant in *United States v. Lopez*.

ANSWER: **San Antonio** [or Garcia v. **San Antonio** Metropolitan Transit Authority]

[10e] Lilly Ledbetter sued Goodyear for gender pay discrimination based on this other labor law that interacts with the Equal Pay Act. This 1964 law outlawed segregation.

ANSWER: **Civil Rights Act** of 1964

<KJ, American History>

2. Pfizer's final synthetic step of Paxlovid's active compound nirmatrelvir employs an inner salt carbamate to generate the nitrile group in this type of reaction. For 10 points each:

[10h] The Burgess ("**BUR-jess**") reagent is used in what type of reaction that converts amides to nitriles?

ANSWER: **dehydration** [prompt on **elimination**]

[10m] *Description acceptable*. The Burgess reagent has this property commonly known by a German term.

Molecules with this property are also called inner salts and include betaines ("**BEE-tanes**") found in soap products.

ANSWER: **zwitterionic** [accept descriptions that indicate having both **positive and negative** charges on the **same molecule**, or having **opposite charges intramolecularly**]

[10e] Alcohols can be dehydrated to form alkenes under conditions catalyzed by these proton-donating species.

ANSWER: **acid** [accept **acid**-catalyzed dehydration]

<JZ, Chemistry>

3. The narrator of this novella imagines three tortoises transforming into "Roman coliseums in magnificent decay" in its section "The Two Sides of a Tortoise." For 10 points each:

[10h] Name this novella comprised of ten stories narrated by a sailor in the Galápagos islands. Characters in this novella include a tyrannical "dog-king" and a stranded "chola widow" named Hunilla.

ANSWER: "The **Encantadas**"

[10e] This author of "The Encantadas" collected it along with his stories "Benito Cereno" and "Bartleby, the Scrivener" in his book *The Piazza Tales*.

ANSWER: Herman **Melville**

[10m] Each of the stories in "The Encantadas" is titled for this sort of artistic work. A Washington Irving collection featuring "Rip Van Winkle" is framed as a "book" of these artworks by Geoffrey Crayon.

ANSWER: **sketches** [accept *The **Sketch** Book of Geoffrey Crayon*]

<HG, American Literature>

4. Answer the following about how folk memories may have inspired myth, for 10 points each.

[10h] These animals include the extinct *Megalanina*, whose conflict with indigenous peoples may have inspired stories of the Whowie. Folk memories have been observed regarding the geographical distribution of another of these animals native to Flores ("**FLOR-iss**") Island.

ANSWER: monitor **lizards** [accept **goannas**; accept **Komodo dragons**; reject "iguanas"]

[10m] The child-snatching Te Hokioi in this people's mythology was likely inspired by encounters with the Haast's Eagle. Kupe ("**KOO-pay**") was the first of these people's ancestors to discover their now-homeland using *wakas*.

ANSWER: **Māori** [prompt on **Polynesians**]

[10e] Oral tradition from this country's Jaralde people tells of how Ngurunderi flooded a crossing between the mainland and Karta Pintingga. The Rainbow Serpent created songlines during this country's Dreamtime.

ANSWER: **Australia** [or Commonwealth of **Australia**] (*Karta Pintingga is also known as Kangaroo Island.*)

<KT, Beliefs>

5. Frédéric Trigo Piula made a parody of the *Mona Lisa* wearing a Kwele mask to compare the use of this ratio in traditional African sculpture and Western painting. For 10 points each:

[10e] Name this ratio. Audrey Bennett has used the architecture of Logone-Birni and statues of the Warua Master to argue that Fibonacci's studies in Béjaïa ("**beh-jai-uh**") may have inspired his promulgation of this aesthetic ratio in Europe.

ANSWER: **golden** ratio [accept **phi**]

[10h] Trigo Piula drew inspiration from Kongolese *n'kisi* sculptures, which are embedded with these objects. These objects appear on the hands of a sufferer of ergotism in a 1516 artwork sculpted by Nikolaus Hagenauer.

ANSWER: **nails** [accept **trunnels**] (*The work mentioned is the **Isenheim Altarpiece**.*)

[10m] Similar in role to *n'kisi*, the Luba used a "prestige" one of these objects made by the Warua Master. A spirit called a *sumsum* is contained in one of these objects that is always displayed on its side and is covered in bells and brass weights.

ANSWER: **stools** [accept Prestige **Stool**; accept Golden **Stool**; accept **thrones**]

<AS, Visual Arts>

6. During the core collapse of a supernova, this process is responsible for splitting iron nuclei into helium nuclei and photons. For 10 points each:

[10h] Name this process by which high energy electromagnetic radiation causes a nucleus to excite and then split into smaller elements while emitting neutrons, protons, or alpha particles.

ANSWER: **photodisintegration** [accept **phototransmutation**; accept **photonuclear reaction**]

[10m] After Chadwick and Goldhaber discovered the photodisintegration of deuterium, this scientist and Rudolf Peierls found a theoretical explanation during a 4-hour train ride. Gamow humorously added this scientist to a paper that he wrote with his student Ralph Alpher.

ANSWER: Hans **Bethe** [or Hans Albrecht **Bethe**]

[10e] Hans Bethe later worked on the Manhattan Project and the project to develop this second generation nuclear bomb, which culminated in the Teller-Ulam design and is named for its central light element.

ANSWER: **hydrogen bomb** [accept **H-bomb**; accept **thermonuclear weapon** or **fusion weapon**]

<JF, Physics>

7. Dewi Ayu's hair has grown to the ground when she comes back from the dead in an Eka Kurniawan novel titled for this concept. For 10 points each:

[10m] Name this concept, which names a character who abruptly floats to the sky while folding sheets, as well as a green-haired character whose death prompts her sister to stop speaking for nine years.

ANSWER: **beauty** [accept **bella**; accept **Beauty is a Wound**; accept Remedios the **Beauty**; accept Rosa the **Beautiful**]

[10e] This author described Sierva's abundant hair growing after her death from rabies in *Of Love and Other Demons*. This author created Remedios the Beauty and other members of the Buendía family in his novel *One Hundred Years of Solitude*.

ANSWER: Gabriel **García Márquez**

[10h] After his wife died, this poet lamented spaces "Without Her" and claimed that her hair had grown when he had her exhumed. This poet coined the word "yesteryear" in his translation of Francois Villon's "The Ballad of Dead Ladies."

ANSWER: **Dante Gabriel Rossetti** [prompt on **Rossetti**]

<AY, Other Literature>

8. This politician attended the Paris Peace Conference under a pseudonym meaning “Nguyễn (“win”) the Patriot” and attempted to recruit leading French Socialists to support the Third International. For 10 points each:

[10e] Name this supporter for Vietnamese self-determination, the first president of North Vietnam.

ANSWER: **Hồ** Chí Minh [or Nguyễn Sinh **Cung** or Nguyễn Tất **Thành** or Bác **Hồ** or **Hồ** Chủ tịch]

[10h] After his arrest for looting the Bântéay (“BAHN-tee-eye”) Srei Temple, this man began agitating against colonial corruption in Indochina by co-founding a predecessor of the Việt Minh. Charles de Gaulle tapped this man to be the first head of the Ministry of Culture.

ANSWER: André **Malraux** (“mal-RO”) [or Georges André **Malraux**] ([Malraux founded the Young Annam League.](#))

[10m] The 1930 Phú Riềng Đỏ (“foo zee-ung doh”) strikes targeted French colonial corruption in this industry. Atrocities committed by Europeans to enforce African quotas in this industry were reported by Roger Casement.

ANSWER: **rubber** industry

<AS, European History>

9. Sara Wakefield and Christopher Uggen argue that these facilities, which some view as a social deterrent or continuation of residential segregation, contribute greatly to stratification in modern American society. For 10 points each:

[10e] Name these facilities that Michelle Alexander denounced as “the New Jim Crow” for their systemic oppression of people of color and figurative continuation of slavery.

ANSWER: **prisons** [or **jails**]

[10h] Wakefield and Uggen define incarcerated people to be one of these entities. Max Weber coined this term to form a three-part theory of stratification that includes classes and parties.

ANSWER: **stände** [or **status groups**]

[10m] In *The Hidden Cost of Being African American*, Thomas Shapiro stresses the importance of family wealth to this process. Alan Krueger created the Great Gatsby Curve to illustrate an intergenerational form of this process.

ANSWER: social **mobility** [or class **mobility**; accept upward **mobility**; accept intergenerational **mobility**]

<KJ, Social Science>

10. A 2022 National Geographic show follows a climbing team led by Alex Honnold searching for undiscovered species atop one of these “islands in the clouds.” For 10 points each:

[10h] Name these magnificent table mountains of the Guiana (“ghee-ANN-uh”) Shield, like Mount Roraima. The name of these mountains means “house of the gods” in Pemon.

ANSWER: **tepui**s (“tep-WEE”) [or **tepuyes**; accept *Explorer: The Last Tepui*]

[10e] The Guiana Shield’s plateaus and tepuis make it home to many well-known examples of these features, like “Kaieteur” (“KYE-uh-toor”) and “Angel.” The Paraná River’s damming inundated one of these features with the highest flow rate in the world.

ANSWER: water**falls** [accept Kaieteur **Falls** or Angel **Falls** or **Salto** Ángel or Guaíra **Falls** or **Salto**s del Guairá or **Salto**s do Guairá or **Chororo** Guayrá]

[10m] Most tepuis are composed of arenites high in this mineral, lending them their unique shape. Artigas, Uruguay is a leading producer of a gemstone made of this mineral, whose “shocked” form is found in the Chicxulub (“chick-shoo-LOOB”) Crater.

ANSWER: **quartz** [prompt on **silica**s or **SiO₂**; anti-prompt (ask, “Can you be less specific?”) on **amethysts**]

<AS, Geography>

11. In a play, the protagonists realize upon hearing muffled pipe music that this group has stowed away in barrels on a ship bound for England. For 10 points each:

[10m] Identify this group of characters, which mocks the mortality of two men who eventually disappear from view. In another play, the protagonist decides to use these characters to “catch the conscience of the king.”

ANSWER: the **Players** from *Hamlet* [or the **actors** from *Hamlet*; or the **actors** in *The Murder of Gonzago*; or the **Tragedians** from *Rosencrantz and Guildenstern Are Dead*; prompt on players or actors or tragedians by asking, “From what play?”]

[10e] This playwright examined *Hamlet*’s metatheatrical elements in his absurdist tragicomedy *Rosencrantz and Guildenstern Are Dead*. He also wrote *Arcadia*.

ANSWER: Tom **Stoppard** [or Tomáš **Stráussler**]

[10h] In Stoppard’s play *The Real Thing*, Annie’s relationship with the director Henry sours when she is cast as this play’s lead. Hippolyta tries to poison her ex-lover at his wedding in this play, but instead dies of poison herself.

ANSWER: *’Tis Pity She’s a Whore* (by John Ford)

<HG, British Literature>

12. In Amarna Letter EA35, Alashiya’s king holds the “Hand of Nergal,” a plague, responsible for a shortage in this commodity. For 10 points each:

[10m] Name this commodity, the subject of the earliest complaint letter targeted at the merchant Ea-nasir. The kingdom of Dilmun produced this good, which was often shaped into an oxhide for trade purposes.

ANSWER: **copper**

[10e] Hundreds of copper oxhide ingots were discovered within one of these things by a local sponge diver off the coast of Uluburun. The Phoenicians used one of these objects known as a bireme.

ANSWER: **ships** [or **boats**; accept **shipwrecks**]

[10h] A limestone mold for the oxhide ingot was found at Ras ibn Hani, located near this ancient Levantine trade center that was leveled by the Sea Peoples. This city’s language was used to write the Baal Cycle.

ANSWER: **Ugarit** [accept **Ugaritic**]

<KT, Other History: Ancient>

13. Telugu families may celebrate this event with a *langa voni* ceremony, during which the honoree is gifted a half-*sari* to wear until marriage. For 10 points each:

[10e] Name this event. In some areas of Nepal, girls first undergo the dangerous practice of *chhaupadi*, or seclusion in a hut, for up to fourteen days after this event, which signifies entrance into womanhood.

ANSWER: **menarche** [accept answers like **first** menstrual **period**; prompt on menstruation]

[10h] During the *langa voni* ceremony, the honoree invokes this deity to ask for prosperity. *Diyas* guide this deity towards *rangoli*-decorated homes during another holiday.

ANSWER: **Lakshmi** [accept **Padmā** or **Shrī**] (The second holiday is Diwali.)

[10m] The *langa voni* ceremony is equivalent to the less common *keshanta* ceremony for boys, which involves performing this action. Members of a different Indian religion, conversely, do *not* perform this action to honor *kesh*.

ANSWER: **shaving** their **hair** or **beard** [or **cutting** their **hair** or **beard**; or **tonsuring**]

<AS, Beliefs>

14. For any probability distribution, this function, denoted lambda or *h*, is equivalent to the PDF over one minus the CDF. For 10 points each:

[10h] Name this function. In the Cox model, one of these functions is expressed as a “baseline” one of these functions multiplied by the exponential of the response of a multiple linear regression.

ANSWER: **hazard** function [or **hazard** rate]

[10m] Hazard functions are integral to this branch of statistics that models the time until an event of interest, such as death or failure. The namesake function of this branch of statistics can be approximated with a Kaplan–Meier curve.

ANSWER: **survival** analysis [accept **survival** function; accept **survivorship** curve; accept **reliability** analysis or **duration** analysis or **event history** analysis]

[10e] In order to compare the survival distributions of two groups, an investigator performs the log-rank type of this procedure. These procedures formulate a “null” example of a namesake statement, which is rejected if the p -value is small enough.

ANSWER: **hypothesis** tests [prompt on statistical **testing**; prompt on more specific hypothesis tests like the z -**test** or t -**test**]

<IZ, Other Science: Math>

15. One of these places at Michigan State University inspired Ellen Taaffe Zwilich’s (“**tayf ZWILL-ik’s**”) Fourth Symphony, in which a chorus repeats, “*Fragilis!*” after singing a litany of its constituents. For 10 points each:

[10h] Name these places. A set of nocturnes for piano and orchestra named for these places once had a tango that was instead used as a Pantomime in its composer’s ballet *Love, the Magician*.

ANSWER: **gardens** [accept botanical **gardens**; accept Symphony No. 4, “The **Gardens**”; accept *Nights in the Gardens of Spain* or *Noches en los jardines de España*]

[10e] In “The Gardens,” “Litany for Endangered Plants” precedes a meditation on “living” ones of these remains. In *Carnival of the Animals*, xylophones play *Danse Macabre* in a movement about these dinosaur remains.

ANSWER: **fossils** [accept “Meditation on Living **Fossils**”; accept “**Fossiles**”]

[10m] A D-major *sesquialtera* opens this piece by Joaquín Rodrigo about a set of gardens that Ferdinand VI rebuilt. Chick Corea’s “Spain” samples a theme from this piece’s *Adagio* that starts on an F-sharp mordent.

ANSWER: **Concierto de Aranjuez**

<EG, Auditory Arts>

16. In *The Habits of Racism*, Helen Ngo draws on Maurice Merleau-Ponty’s method in this field of philosophy to understand how racism is embodied in our habits and ingrained in our modes of perception. For 10 points each:

[10m] Name this philosophical field that studies the structures of consciousness as experienced from a first-person point of view.

ANSWER: **phenomenology** [or **phénoménologie**]

[10e] Lewis Gordon uses this thinker’s argument that antisemites engage in bad faith by refusing to engage in self-creation as a basis for understanding anti-Black racism. This French existentialist wrote *Being and Nothingness*.

ANSWER: Jean-Paul **Sartre**

[10h] This book’s author argues against applying Sartre’s analysis of antisemitism to anti-Black racism by distinguishing between perceived capability and incapability. This book analyzed the lived experience of the Black man through the author’s experience of a little white girl pointing out his race on the street.

ANSWER: **Black Skin, White Masks**

<MB, Philosophy>

17. A 2010 study by Yi et al. found the fastest known example of human allele frequency change in Tibetans, among whom one of these variations in hypoxia-associated *EPAS1* is becoming rapidly fixed. For 10 points each:

[10h] Name these genetic markers whose relationships to specific phenotypes like altitude adaptation can be elucidated via genome-wide association studies.

ANSWER: **single nucleotide polymorphisms** [or **SNPs** (“**snips**”)]

[10e] Altitude adaptation can be regulated in this manner, as indicated by high DNA methylation of erythropoiesis-associated genes among Quechua people. This type of inheritance relies on factors beyond nucleotide sequence.

ANSWER: **epigenetic** [accept word forms]

[10m] While Himalayan populations come by much of their altitude tolerance via upregulation of the HIF pathway, Andean populations seem to upregulate the hypoxia response pathway involving this small molecule vasodilator.

ANSWER: **nitric oxide** [or **NO**; reject “nitrous oxide”]

<AS, Biology>

18. John Kerrigan's essay titled for this character's *Variations* explores how Drucilla Cornell compared this character to Toni Morrison's Sethe for their crime of infanticide. For 10 points each:

[10e] Name this character who poisons a set of robes for Princess Glauce before stabbing her children to exact revenge on her ex-husband Jason. She then flies away on Helios's chariot.

ANSWER: Medea

[10m] This poet called herself "Kali, Medea...the unwomanly woman in flight from motherhood" in *Of Woman Born*. This poet mourned "a book of myths / in which / our names do not appear" in "Diving Into the Wreck."

ANSWER: Adrienne Rich [or Adrienne Cecile Rich]

[10h] Medea lives in a trailer and dies in a fire in this playwright's version of *Medea*. This author's version of *Antigone*, produced under Nazi censorship, features three guards who continue playing cards after Antigone's death.

ANSWER: Jean Anouilh [or Jean Marie Lucien Pierre Anouilh]

<CM, European Literature>

19. In 2022, this event's director Thierry Frémaux pointed to Claire Denis and Valeria Bruni Tedeschi as examples of nominated female directors amidst criticism about representation. For 10 points each:

[10e] Name this French film festival that awards the Palme d'Or.

ANSWER: Cannes Film Festival

[10m] This New Zealand director was the first woman to receive the Palme d'Or for her film *The Piano*. A boy who builds a lasso discovers a man with Bronco Henry's gay porn magazines in this director's film *The Power of the Dog*.

ANSWER: Jane Campion

[10h] In 2021, this film caused Julia Ducornou to become the first woman to win two Palmes d'Or. A showgirl grows metallic plates and has sex with a fire truck in this body horror film.

ANSWER: Titane

<GE, Other Arts: Film>

20. Altaian revolutionaries of the Burkhanist religious movement attempted to enter this conflict as the Karakorum Government to rebuild Genghis Khan's empire, with little success. For 10 points each:

[10e] Name this conflict between the Bolsheviks' Red Army and the Whites allied with the Tsar.

ANSWER: Russian Civil War [or Grazhdanskaya voyna v Rossii; accept Rossiia grazhdan juu or Rossiyada fuqarolar urushi; reject "Russian Revolution" or "Revolutsiya v Rossii"]

[10h] The Ürkün revolt and the Kokand massacre during the Russian Civil War sparked this twenty-year-long guerilla uprising that destabilized Soviet rule in Central Asia. Ibrahim Bek and the war criminal Enver Pasha died while leading this rebellion.

ANSWER: Basmachi movement [or Basmachis or Basmachestvo or Bosmachilik or Basmasylar Qozğalysy or Basmachylyq or Bosmachiho]

[10m] The reformist Jadids, who often called themselves by this adjective, vied for Central Asian power alongside Basmachis during the Russian Civil War. Enver Pasha was one of three "Pashas" who led a similar movement named for this adjective.

ANSWER: young [accept word forms like youth; accept Young Turks or Jön Türkler or Genc Türkler; accept Yoshlar or Yäslär; accept Young Bukharians or Yosh Buxoroliklar or Mladobukhartsy]

<AS, World History>