

Chicago Open 2023

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Editors 2

Tossups

1. Following Bodana's exchange of their second *mūrti* for a nose ring, priests from a city with this name left for Savitri Talaav to dig up a third *mūrti* with half-formed eyes. It's not in Maharashtra, but Supriyā's devotion to Shiva led to the establishment of this city's *jyotirlinga* ("J'YOH-tir-lin-guh"), whose worshippers are protected from poison. It's not Vrindāvan ("v'rin-DAH-vun"), but Mīrabai merged with an idol in this city that is the source of *gopi chandan*, a sacred mud that Vaishnavas use for *tilak*. 72 pillars support the Jagat Mandir shrine in this city, the westernmost of the (*) Char Dham pilgrimage sites. At the dawn of the Kali Yuga, Queen Gāndhārī's curse destroyed a city with this name to which the Yādavas had migrated from Mathura. For 10 points, the Rukmini Devi Temple is located in a modern-day Gujarati city with what name shared by a mythological city that sank into the sea following the departure of its ruler Krishna?

ANSWER: **Dwarka** ("DWAH-ruh-kah") [or **Dvārakā** or **Dvāravatī**; accept Bet **Dwarka**, Beyt **Dwarka**, or **Shankhodhar**; accept **Dwarka**dhish Temple] (The *jyotirlinga* is that of the Nāgeshwaram temple.)

<Kevin Thomas, Beliefs>

2. A style of music from this country based on a repeated I – IV – I 6/4 – V ("one, four, one-six-four, five") progression was developed at illegal liquor-dealing establishments in the 1920s. Migrant laborers developed an all-male style of vocal music from this country whose name translates as "walk softly." The pennywhistle is featured in this country's *kwela* music, which developed from *marabi*. John Mehegan's visit to this country inspired the formation of a jazz group led by a musician nicknamed (*) Dollar Brand. In 1939, Gallo Records recorded a song from this country sung in the *isicathamiya* ("ee-see-kah-tha-ME-ya") style by Solomon Linda and His Evening Birds, later recorded by The Weavers as "Wimoweh." An album from this country titled for a city's "indestructible beat" features guitar-based *mbaq'anga* ("umm-bah-KON-gah") music, which was also performed by Miriam Makeba and Hugh Masekela. For 10 points, what country is home to Ladysmith Black Mambazo and the plastic vuvuzela?

ANSWER: **South Africa** [or Republic of **South Africa**, **RSA**, Republiek van **Suid-Afrika**, iRiphabliki yo**Mzantsi-Afrika**, or iRiphabhuliki yase**Ningizimu Afrika**] (The fourth clue describes the Jazz Epistles.)

<Victor Pavao, Other Fine Arts>

3. The Stork–Eschenmoser hypothesis was first identified from the biosynthesis of one of these compounds. Besides sterols and indoles, Salkowski’s test can be used to detect the presence of these compounds. The biosynthesis of these compounds is mediated by the TPS protein family, which uses GPP, FPP, or GGPP as natural precursors. Those precursors form from the condensation of D·MAPP and I·P·P, produced either by the MVA or MEP metabolic pathways. Pyrolysis of (*) rubber yields the most basic molecule used to make these compounds. The structural isomers of molecules that make up these compounds most commonly combine in the “head-to-tail” method, and the classification of these molecules is based on the C5 rule. In animals, a “tri” form of these molecules is the precursor to steroids. For 10 points, name these unsaturated hydrocarbons made of isoprene subunits.

ANSWER: terpenes [or terpenoids; accept isoprenoids, triterpene, or triterpenoid; prompt on isoprene until read by asking “what molecules are made of isoprene subunits?”]

<Munir Siddiqui, Chemistry>

4. *Word forms acceptable.* A book titled for this concept examines Lewis Nkosi’s *Mating Birds* and Timothy Findley’s *Not Wanted on the Voyage* as novels that “re-place” the text by “appropriating” the English language. Lorne Murchison enters Ontario politics in an early Canadian novel titled for a word form of this concept. *Kim* succeeds aesthetically because it fails politically according to an essay on “The Pleasures of [this concept].” This concept titles a punning 1989 overview of (*) postcolonial criticism by Ashcroft, Griffiths, and Tiffin. Derek Walcott writes “A smell of dead limes quickens in the nose / The leprosy of [this concept]” in “Ruins of a Great House.” A form of this noun is the [emphasize] *second* title concept in a book that notes an Antiguan plantation funds Mansfield Park and that identifies “Two Visions in Heart of Darkness.” For 10 points, name this concept that an Edward Said book pairs with culture.

ANSWER: empire [or imperialism; accept word forms; accept *Culture and Imperialism*; accept *The Empire Writes Back*; accept “The Pleasures of Imperialism”; accept *The Imperialist*]

<Henry Atkins, World Literature>

5. In 1870, Edmund Smith invented a machine to process this resource, which he gave a racist nickname referencing the immigrant workers it was intended to replace. This non-wood resource was a driver of early American settlement of the Lost Coast. In 1864, Hapgood, Hume, and Company founded an early processing facility for this resource on a barge in the Sacramento River. William Ruckelshaus mediated a 1990s “war” over this resource that included a blockade of Friday Harbor. “Fighting Dan” Sutherland accused a company that processed this resource of being the “great monopolists of (*) Bristol Bay.” During the [emphasize] *summer*, this was the primary resource processed by Filipino Alaskeros. For 10 points, dams along the rivers of the US West Coast have hindered the spawning of what kind of fish?

ANSWER: salmon [accept species of Pacific salmon such as, but not limited to, coho, sockeye, Chinook, pink, or chum salmon; prompt on fish until mention]

<Alex Fregeau, US History>

6. In a play, this figure asks to be “rubbed out like a painting” and contemplates an unwanted marriage and suicide before being told to “question the daughter of the sea-nymph.” They’re not Busiris, but most of an Isocrates oration named for this figure is spent lauding a person who tried to abduct them. In a play titled for this figure, a man pretends to be a messenger heralding his own death in order to obtain a ship for a sea-burial and uses the ship to escape. It is “an equal error” to “blame the praisable” and “praise the blamable,” according to (*) a Gorgias encomium of this figure. After being blinded for slandering this figure, Stesichorus wrote a “Palinode.” In a Euripides drama, this figure languishes in Theoclymenus’ palace, having been replaced by a Hera-crafted “phantom” and sent to Egypt. For 10 points, name this woman who mocks her husband after he is rescued by Aphrodite from a duel with Menelaus in the *Iliad*.

ANSWER: Helen [or Helen of Troy, Helen of Sparta, Helene, or Helena] (The second line refers to Theseus’s abduction of Helen.)

<Arya Karthik, European Literature>

7. **This city is the epithet of a Breton choirmaster whose motets were incompletely edited by George Nugent. A Jewish violinist from this city wrote 33 polyphonic settings of Hebrew liturgical music, punningly titled “Songs of Solomon.” L’Ottuso Accademico defends a compositional style first used in this city in the book *On the Imperfections of Modern Music*. Samuel Cohen set a poem by Naftali Herz Imber to the tune of a madrigal named for this city. While working in this city, a composer was criticized by Giovanni (*) Artusi for a style of song in which lyrics govern music. “Hatikvah” and *Ma Vlást* separately adapted the tune of a madrigal named for this birthplace of *seconda pratica*. Before moving to Venice from this city, one composer wrote three of his nine madrigal books and the oldest regularly performed opera. For 10 points, name this city where the early phase of Claudio Monteverdi’s career was patronized by the Gonzagas.**

ANSWER: **Mantua** [or **Mantova**; accept “La **Mantovana**” or “Il Ballo di **Mantova**” or “**Mantuan** Dance”; prompt on “**Fuggi, Fuggi**” by asking “what is that madrigal’s alternate title?”] (The first clue refers to Jacquet of Mantua. The second clue refers to Salomone Rossi. “Hatikvah” is not directly based on “Vltava;” Cohen used the Romanian adaptation of “La Mantovana,” “Carul cu boi,” while Smetana used its Czech adaptation, “Kočka leze dírou.”)

<Jacob Egol, Classical Music and Opera>

8. *Specific term required.* **The anxieties stemming from this title trait are examined via interviews with fifty New Yorkers in Rachel Sherman’s book *Uneasy Street*. Workers in Luton with this title trait are analyzed in a series of studies that dispute the theory of “embourgeoisement” by John Goldthorpe. A 1950s-era TV sits atop a pile of garbage on the cover of a book titled for an “all-consuming epidemic” of this trait by de Graaf, Wann, and Naylor. The misinterpretation of a book titled for this trait led “familiar America” to identify with it according to Michael (*) Harrington’s *The Other America*, which contrasts the “invisible land” and a group with this trait. A book titled for this trait argues that advertising has created a “dependence effect” and rejects the “conventional wisdom” of classical economics in postwar America. For 10 points, what trait denotes the title “society” of John Kenneth Galbraith’s magnum opus?**

ANSWER: **affluence** [or word forms like **affluent**; accept *The **Affluent** Worker*; accept *The **Affluent** Society*; accept **influenza**]

<Tim Morrison, Social Science>

9. **One technique to help solve this problem repeatedly recomputes values that are “never killed”; that technique is rematerialization. A particular graph being perfect and chordal when the input to this problem is in SSA makes it much easier to perform. In 1981, Chaitin et al. proved this problem was NP-complete by modeling it as coloring of the interference graph. In solving this problem, coalescing or splitting steps might help minimize “spillage,” which is insertion of expensive (*) loads and stores; however, spilling *must* be part of a solution to this problem when there are too many live variables. Calling conventions dictate portions of solutions to this late stage of compilation; for example, x86 requires return values to be in EAX when functions end. For 10 points, name this compilation stage that designates physical units of processor storage to hold variables and expressions.**

ANSWER: **register allocation**

<Alistair Gray, Other Science - Computer Science>

10. **The presence of wattle throughout the stratigraphic layers of this country’s site of Karnatukul, or the Serpent’s Glen, evinces its long history of human habitation. Though now discredited, remains found at Kow Swamp in this country were initially believed to represent a late-surviving population of *Homo erectus*. Evidence of 46 thousand years of continual habitation in this country was lost in 2020 with the destruction of the (*) Juukan (“joo-kahn”) Gorge sites. The LM1 site in this country represents one of the world’s oldest known cremations and was found in a dried lake. This country was first settled when it comprised the [emphasize] *largest* proportion of the continent of Sahul, leading to the extinction of species like *Diprotodon* and *Thylacoleo*. For 10 points, Mungo Man was found in what country, whose settlement preceded the loss of its marsupial megafauna?**

ANSWER: **Australia** [or Commonwealth of **Australia**]

<Alex Fregeau, Other History>

11. In a story set in this town, a reporter hears about “X-ray spectrogoniometers” before he heads to the bleachers of a softball field, where he finally sees the title deer. In a novel set in this town, a doctor has all of his degrees revoked when an audit reveals that he failed to meet his undergrad fitness requirements. Parodying Caesar’s *Commentaries*, a novel opens by claiming that this town “is divided into three parts,” the third of which is called Homestead. The Shah of (*) Bratpuhr visits this town in a novel whose protagonist joins the anti-industrial Ghost Shirt Society. After spending time in a VA hospital in Lake Placid, a character starts a career as an optometrist in this town years before he becomes “unstuck in time.” For 10 points, *Player Piano* is set in what New York town where Billy Pilgrim lives in *Slaughterhouse-Five*?

ANSWER: Ilium, New York (The first story is “Deer in the Works.”)

<Tim Morrison, American Literature>

12. Before he moved to Germany, Rabbi Israel Salanter lived in this modern country and founded the Musar Movement centered on individual ethical and spiritual development. For most of its existence, the Romm family operated a publishing house out of this modern country and printed a popular version of the Talmud. Decades before the Zionist movement, a scholar most associated with this modern country inspired a group called the (*) *perushim* to immigrate to the Holy Land. This modern country was the [emphasize] *birthplace* of the founder of Reconstructionist Judaism, Mordecai Kaplan. This modern country became a center of the Misnagdim opponents of Hasidism due in large part to the work of Elijah ben Solomon Zalman. For 10 points, the modern capital of what country is the namesake of the Vilna Gaon?

ANSWER: Lithuania [or Lietuva, Republic of Lithuania, or Lietuvos Respublika]

<Alex Fregeau, European History>

13. Models of this process are constrained by an optical depth derived from the large-scale E-mode polarization power spectra of the CMB. Studying this process is the chief goal of the HERA instrument, which is a precursor to the Square Kilometer Array. One approach to studying the sources of energy for this process relies on high-redshift analogs of Haro 11 and Tololo-1247-232, which emit photons in the LyC (“lye-C”) region. The main evidence that this process was completed around a redshift of (*) six is that quasar (“KWAY-zar”) spectra at greater redshifts display Gunn–Peterson troughs. This process began at the end of the cosmic dark ages as small HII (“H-two”) regions formed, and eventually grew to permeate the entire universe. For 10 points, name this cosmological process that occurred approximately a billion years after the Big Bang as UV light caused neutral hydrogen to lose electrons.

ANSWER: reionization [accept Epoch of Reionization; accept the reionization of neutral hydrogen or the reionizing of HI (“H-one”); prompt on the ionization of hydrogen or the ionizing of hydrogen by asking “what is the name of the cosmological process?”] (The first sentence refers to the Thomson scattering optical depth. HERA, or Hydrogen Epoch of Reionization Array, is a radio telescope. LyC galaxies is an abbreviation of Lyman continuum galaxies.)

<Jonathen Settle, Astronomy>

14. This body of water contains the Atlantis II Deep submarine basin, one of the world’s major examples of ore-rich “hot brines.” It’s not in Belize, but as many as 200 divers have asphyxiated in recent decades while trying to pass through the “Arch” at the bottom of a Blue Hole in this body of water. This body of water faces an imminent oil spill from the *FSO Safer* (“SAFF-er”), a derelict supertanker that has been moored in it since 2015. No significant (*) rivers or streams flow into this body of water, whose high salinity and annual temperatures have made its coral reefs uniquely resistant to bleaching. The southern entrance to this body of water is the “Gate of Grief,” or Bab-el-Mandeb, a route avoided by overlarge “Capesize” ships. For 10 points, name this biodiverse shipping highway that connects the Gulf of Aden to the Gulf of Suez.

ANSWER: Red Sea [prompt on Indian Ocean; prompt on Gulf of Aqaba or Gulf of Suez until “Gulf of Suez” is read by asking “that gulf is an extension of what body of water?”]

<Henry Atkins, Geography>

15. *Two answers required.* It's not Zeus or Dionysus, but worshippers would make sacrifices to one of these deities while singing men kindled torches on the other's altar on the second day of the Apaturia festival. One of these deities frees their mother on a relief from a Spartan temple dedicated to the other's Chalkiokos ("HAL-kee-OH-kos"), or "Bronze House," aspect. Girl acolytes known as *arrephoroi* ("ah-REF-oh-ROI") aided the *ergastinai* ("ehr-GAS-tee-NYE") in weaving a sacred peplos during a festival sacred to both of these deities called the Chalkeia ("HAL-kay-ah"). Hyginus records how Neptune urged one of these deities to ask Zeus for the other's (*) hand in marriage, only for the latter to "defend her virginity with arms." Two daughters of Cecrops go insane after unveiling Erichthonius, who was born during the attempted rape of one of these deities by the other. For 10 points, name these two deities, one of whom is a blacksmith god who cut open Zeus's head to allow for the other's birth.

ANSWER: **Hephaestus** AND **Athena** [accept **Vulcan** in place of "Hephaestus"; accept **Minerva** in place of "Athena"]

<Kevin Thomas, Beliefs>

16. In a likely invented account, al-Ṭabarī claimed that Qutayba ibn Muslim captured this city and marked captives' necks with the words "Part of what God has given [him]." A scholar named for this city wrote the first known dictionary of Turkic languages, the *Dīwān Lughāt al-Turk*. A dancing elephant was allegedly part of the loot taken from this city when it was captured in 970 from the Karakhanids. This city was the capital of the Shūlè ("shu-luh") Kingdom. This city was one of the Four Garrisons of (*) Ānxī ("ahn-shee") established by the Táng Dynasty along with Karashahr, Khotan, and Kucha. This city was the [emphasize] western convergence point for the northern and southern branches of the Silk Road that passed around the edges of the Taklamakan Desert. For 10 points, name this city, a major hub for trade over the Pamir Mountains in what is now far western China.

ANSWER: **Kashgar** [or **Kāshí** or **Qeshqer**]

<Alex Fregeau, World History>

17. In response to Hilary Putnam's model-theoretic argument, David Lewis proposed that this relation possesses a namesake "magnetism." This is the first title concept of a 1962 Peter Geach book that first discussed donkey anaphora. This relation titles a book that criticizes the "photograph model" for violating Russell's principle governing object-directed thoughts. After Keith Donnellan observed that definite descriptions have both "attributive" uses and uses (*) based on this relation, Saul Kripke posited that this relation has "speaker" and "semantic" forms. John McDowell edited and posthumously published a Gareth Evans book about the "varieties" of this relation, which attacks the "causal-historical" theory. The word *Bedeutung* ("beh-DOY-tung") is taken to name this relation in translations of Gottlob Frege. For 10 points, name this relation between a name and the object that it denotes.

ANSWER: **reference** [accept word forms like **referring** or **referential**; accept *The Varieties of Reference*; accept **Reference and Generality**]

<Caleb Kendrick, Philosophy>

18. In a 2005 paper, Folker et al. propose that proteins like CLIP-170 "track" these structures via "motor-driven," "surfing," or "end-loading" mechanisms. The Ndc80-Nuf2 ends of rods in the Ndc80 complex associate with these structures and are organized by DASH/Dam1 complex rings, which encircle these structures. A four-headed protein slides antiparallel instances of these structures away from each other, shortening their overlap. (*) Gamma-TuRCs mimic a component of these structures in order to promote their assembly. These structures do not consist of RNA, but the loss of a GTP cap from them promotes their "catastrophe," causing them to exhibit dynamic instability. Chromatid separation is primarily facilitated by the association of kinetochores with these structures. For 10 points, name these structures along which dyneins and kinesins travel.

ANSWER: **microtubules** [accept **spindles**, **spindle fibers**, kinetochore **microtubules**, polar **microtubules**, or **K-fibers**] (The four-headed protein is kinesin-5.)

<David Bass, Biology>

19. Clement Greenberg called this artist's work "more like life itself than like visual art." Many of this artist's paintings are made on top of 19th century canvases he purchased for cheap at flea markets. A portrait by this artist where a young boy in a bright red uniform holds his hands to his hips is at the center of Ellen Umansky's novel *The Fortunate Ones* and is titled *The Bellhop*. After an extensive collection of this artist's paintings owned by gallerist-turned-politician Viktor (*) Babariko was seized, a 1920s portrait that he painted of a model crossing her arms became a protest symbol against the regime of Alexander Lukashenko. For his neighbors' sake, this artist agreed to use formaldehyde to stop the stench from the studio in which he painted his most common artistic subject. For 10 points, name this Belarussian-Jewish Expressionist noted for the thick brushwork on his paintings of rotting meat.

ANSWER: Chaim Soutine [or Chaim-Iche Solomonovich Sutin]

<Mike Bentley, Visual Fine Arts>

20. Early in this novel, its narrator blames "polyglot fate" for a doctor being named Todd, and dubs a woman's tumor "big baby De'Ath." While hospitalized, that woman from this novel is chastised for taking grotesque photographs of other patients, like a hydrocephalic baby and a woman with a prolapsed womb. This novel's narrator gives the line "The cafe. In the cafe. In the cafe we," after describing a "[transferral] of affections" away from a woman with whom he played hide and seek on a beach. In this novel, a (*) "strange tide" kills a girl and her mute, web-toed twin brother after they run into the ocean. While staying at the Cedars with the Colonel and Miss Vavasour, this novel's narrator reminisces about his childhood romance with Chloe Grace. This Booker-winning novel has been published in a volume with *The Book of Evidence*. For 10 points, name this novel about Max Morden by John Banville.

ANSWER: *The Sea*

<Arya Karthik, British Literature>

Bonuses

1. In 1989, Lam, Thiel, and Swiercz used a massive case analysis on a Cray-1A to prove that no projective plane of this order exists, thus resolving the smallest case not covered by the Bruck–Ryser theorem. For 10 points each:

[m] One, six, and what number are the three least positive integers n for which a finite field of order n does **[emphasize]** not exist?

ANSWER: **ten** (A finite field of order n exists if and only if n is a prime power. A projective plane of order n exists if a field of order n exists, but it is not known whether the converse is true.)

[h] The existence of a projective plane of order n is equivalent to the existence of n minus one of these objects of order n . Euler theorized these objects in a problem about arranging 36 officers in a six-by-six grid.

ANSWER: mutually **orthogonal Latin square** [or **MOLS**s; prompt on **Graeco-Latin squares**, **Latin squares**, or **Euler squares**]

[e] The proof of Lam et al. relied on the theory of these objects that describe operations on binary strings. Golay and Hamming name binary examples of these objects.

ANSWER: **codes** [accept error-correcting **codes**, Golay **codes**, or Hamming **codes**]

<Arya Karthik, Other Science - Mathematics>

2. Colin Campbell Mitchell was given the nickname “Mad Mitch” by sections of the press for his heavy-handed occupation of a section of this city. For 10 points each:

[h] Name this city. The bombing of a children’s party at RAF Khormaksar in this city was one of several guerilla attacks against the British during a namesake four-year “Emergency.”

ANSWER: **Aden** [or ‘**Adan**’; accept **Aden** Emergency]

[m] This foreign leader supported anti-British movements in Yemen through measures like distributing free radios and propagandistic stamps. An international agreement made with this leader forced Shukri al-Quwatli to resign.

ANSWER: Gamal Abdel **Nasser** [or Gamal Abdel **Nasser** Hussein]

[e] The Aden Emergency of the 1960s weakened the British Empire’s waning position “east of” this structure. Nasser took control of this structure from the British in 1956.

ANSWER: **Suez** Canal [accept **Suez** Crisis or “east of **Suez**”]

<Alex Fregeau, World History>

3. In a story by Borges, a scholar is at a loss to translate terms relating to this practice despite unknowingly hearing abu-al Hasan describe forms of it found in Sin-I Kalal. For 10 points each:

[h] Name this practice, the subject of ambivalence or prejudice throughout basically all of human history according to a 1981 book by Jonas Barish.

ANSWER: **theater** [or **drama**, **acting**, **theatricality**, **performance**, or putting on **plays**; accept **tragedy** or **comedy**; accept *The **Anti-Theatricality Prejudice***]

[e] Averroës seems not to have understood the concept of performance while translating this text, writing that there are many fine tragedies in the Quran. This text introduced dramatic terms like “hamartia” and “catharsis.”

ANSWER: **Poetics** (by Aristotle)

[m] Exceptions to the general lack of theater in the medieval Islamic world include puppetry and *ta’zieh*, which are Persian “condolence plays” that gruesomely reenact this historical event.

ANSWER: **death** of **Husayn** [or Battle of **Karbala**; accept any answer indicating the **killing**, **martyrdom**, or **shaheed** of **Husayn** ibn Ali]

<Henry Atkins, World Literature>

4. Cacti can be used to ensnare and kill El Cuero, a South American man-eater whose form is an amalgamation of a cow-hide, an octopus, and one of these animals. For 10 points each:

[m] Name these animals, whose most notable appendage is used in Yaxchilan's ("yahsh-CHEE-lahn") Lintel 17. In another system, a man's death comes from the sea when his son stabs him using this animal's appendage.

ANSWER: **stingrays** [or **trygon**; prompt on **rays**]

[e] In Yaxchilan's Lintel 17, a man uses a stingray spine to spear his genitals as part of a Mayan practice named for this substance. Bark paper stained with this substance was burned to summon the Vision Serpent.

ANSWER: **blood** [or **ch'ahb**; accept **blood**letting]

[h] Piscine features and a septum pierced with a stingray spine contrast one of these deities from his jaguar-like counterpart. Bones from Tikal portray these aged deities, who steer the Maize God's canoe as part of his cycle of rebirth.

ANSWER: **Paddlers** [accept Stingray **Paddler**, Spine **Paddler**, or Jaguar **Paddler**]

<Kevin Thomas, Beliefs>

5. A composer and mystic born in this city developed the "Fourth Way" and collaborated with pianist Thomas de Hartmann on the writing of several "Sayyid Chants and Dances." For 10 points each:

[h] Name this birthplace of George Gurdjieff. This city is also the birthplace of the composer of *Mockroot*, who included the twelve-minute jazz-influenced "Revolving - Prayer" on a 2018 EP dedicated to this city.

ANSWER: **Gyumri** [or **Alexandropol**; accept *For Gyumri*] (*Mockroot* and *For Gyumri* are by Tigran Hamasyan.)

[m] René Daumal drew on Gurdjieff's thought in a novel about "non-Euclidean adventures" in one of these places named "Analogue." Scriabin's Theosophy-inspired work *Mysterium* was meant to be played at one of these places.

ANSWER: **mountain** [accept **Mount Analogue**]

[e] D. H. Lawrence was displeased when this author joined Gurdjieff's Institute for the Harmonious Development of Man a few months after the publication of her collection *The Garden Party and Other Stories*.

ANSWER: Katherine **Mansfield** [or Katherine **Mansfield** Murry]

<Arya Karthik, Other Academic>

6. Paul Nogier standardized a variant of this technique called auriculotherapy that targets the shénmén ("shun-mun") point of the external ear. For 10 points each:

[e] Many Cochrane reviews have failed to consistently demonstrate the claimed benefits of what alternative medicine therapy that relies on prodding the skin with numerous needles?

ANSWER: **acupuncture** [or **zhēnjiū** ("chun-j'yoh")]

[m] A 2006 German study found that acupuncture was as effective as beta-blockers in treating this condition, which can also be medically managed with triptans and CGRP antagonists.

ANSWER: **migraines** [prompt on **headaches**]

[h] A 2020 trial demonstrated moderate efficacy in treating this condition with auricular acupuncture. This increasingly prevalent conversion disorder is characterized by a normal EEG during "spells."

ANSWER: **PNES** [or psychogenic **non-epileptic seizures**; accept **functional seizures**, **dissociative seizures**, **dissociative seizures**, or **psychogenic epileptic attacks**; prompt on **seizures**]

<Itamar Naveh-Benjamin, Biology>

7. In a short story by this author, a character yells whimsical expletives like “Shitomometer!” and “Foolodancius!” before meeting a man with a “large, mealy-white, pear-shaped face.” For 10 points each:

[h] Name this author of the story “Red Pyramid.” Near the end of a novel by this author, men have sex in a “caterpillar” formation while shouting “Hail!”

ANSWER: Vladimir **Sorokin** [or Vladimir Georgiyevich **Sorokin**] (The novel is *The Day of the Oprichnik*.)

[m] In “Red Pyramid,” Yura misses one of these events by taking a train to Fryazino instead of Fryazevo. In a Dostoevsky novella, Yakov Golyadkin meets his double after being kicked out of one of these events.

ANSWER: **birthday parties** [or a **birthday party**; prompt on dinner **party** by asking “for what sort of occasion?”; reject answers mentioning a “name day”]

[e] In another Sorokin story, Burmistrov claims to have subsisted on only horse soup for seven years while in one of these places. In a novel, Kilgas the Latvian and the Baptist Alyoshka live in one of these places.

ANSWER: **gulag** [accept correctional **labor camps** or clear equivalents, such as forced **labor camps**, **work camps**, or **prison camps**] (The novel is *One Day in the Life of Ivan Denisovich*.)

<Arya Karthik, European Literature>

8. A ship-owner nicknamed “John the Teacher” was promised that his rebellion would be supported by a commander with this surname, but that aid never materialized. For 10 points each:

[m] Give this surname of Alexei, the victorious commander of the Battle of Çeşme (“CHESH-may”), who also names a failed Greek rebellion against Ottoman rule. That commander’s brother with this surname presented his lover with a diamond that may be the same as the Great Mogul Diamond.

ANSWER: **Orlov** [or **Orloff**; or Grigory Grigoryevich **Orlov** or Alexei Grigoryevich **Orlov-Chesmensky**]

[h] The Orlov Revolt began when Alexei Orlov landed in this region. In one of the first military actions of the Greek War of Independence, rebels from this region of the Peloponnese took the city of Kalamata.

ANSWER: **Mani** Peninsula [or **Mánē** or **Maina** Peninsula; accept **Maniots** or **Maniates**]

[e] This ruler formulated the “Greek Plan” to partition the Ottoman Empire and was the lover of Grigory Orlov.

ANSWER: **Catherine the Great** [or **Catherine II**; prompt on **Catherine**]

<Alex Fregeau, European History>

9. A skeletal arm appears below a self-portrait by this artist based on a Félix Vallotton drawing of Fyodor Dostoyevsky. For 10 points each:

[m] Name this artist who was influenced by Dostoyevsky to give the “horse treatment” to paintings by leaving them outside. Sperm and a fetus appear on lithographs of this artist’s controversial nude *Madonna*.

ANSWER: Edvard **Munch** (“Horse treatment” was inspired by the horse dream in *Crime and Punishment*.)

[h] A painter from this modern-day country depicted a “Reader of Dostoyevsky” slumped under a crucifix. An Expressionist movement from this country called the Eight evolved into Rondocubism.

ANSWER: **Czechia** [or **Czech** Republic, **Česká** republika, or **Česko**; prompt on **Czechoslovakia**]

[e] Dostoyevsky crosses his hands over his lap in a portrait by Vasily Perov, a member of this Russian realist movement that included Ilya Repin and were nicknamed for its traveling art shows.

ANSWER: The **Wanderers** [or **Peredvizhniki** or The **Itinerants**]

<Ganon Evans, Visual Fine Arts>

10. In a non-Chinese *Art of War*, this word more narrowly denotes the flexibility to adjust tactics within a battlefield. For 10 points each:

[m] Name this ideal of power and competence that allows a ruler to master *Fortuna*.

ANSWER: **virtù** [accept **virtue**]

[e] This Machievelli text idealizes the civic virtue of the ancients over the *virtù* of a monarch. This commentary on Roman history seems to contradict *The Prince* by espousing republican ideals.

ANSWER: **Discourses on Livy** [or **Discorsi sopra la prima deca di Tito Livio**]

[h] Like Quentin Skinner, this thinker drew on *The Discourses* to develop a “neo-Roman” political theory of civic virtue. This thinker’s 1997 book *Republicanism* was the ideological foundation for Zapatero’s reforms in Spain.

ANSWER: Philip **Pettit** (“PET-it”) [or Philip Noel **Pettit**]

<Henry Atkins, Philosophy>

11. An event that involved these objects took place at the “town” of Crush, Texas, named for organizer William Crush, and drew over forty thousand people. For 10 points each:

[h] Name these objects used in a publicity stunt by a company nicknamed “Katy.” Many of these objects were destroyed in events organized by Joe Connolly.

ANSWER: **trains** [or **locomotives** or train **engines**] (Connolly was nicknamed “Head-on.”)

[e] Prior to the Crash at Crush, the Hocking Valley Railway staged a crash in this state. The first major rail line in the US was partly named for this state.

ANSWER: **Ohio** [accept Baltimore and **Ohio** Railroad]

[m] The names of the candidates in the presidential election of this year were written on the trains in the last staged crash. This election marked the transition between the Fourth and Fifth Party Systems.

ANSWER: **1932** [or US presidential election of **1932**; prompt on '32]

<Alex Fregeau, US History>

12. The narrator of a story finds that this technique occurs four times in Shakespeare’s sonnets before remarking how everything “seemed yellowly blurred, illusive, lost.” For 10 points each:

[m] Name this literary technique used to recall icicles and a parking meter after the deaths of Sybil and Cynthia Vane.

ANSWER: **acrostics**

[e] This author of “The Vane Sisters” is sometimes wrongly credited with inventing the Russian crossword. This author’s character Charles Kinbote goes from live to dead in five while playing “word golf” with John Shade.

ANSWER: Vladimir **Nabokov** [or Vladimir Vladimirovich **Nabokov**; accept Vladimir **Sirin**] (The clued novel is *Pale Fire*.)

[h] In this world, two siblings play a wordplay-heavy game of scrabble called by the anagrammatical name “Flavita.” Endnotes by Vivian Darkbloom explain punning terms from this world’s provinces of Estoty and Canady.

ANSWER: **Antiterra** [or **Demonia**; prompt on the world of *Ada*; prompt on the alternate universe from *Ada* or equivalents]

<Henry Atkins, American Literature>

13. Answer the following about specially-designed orchestral instruments, for 10 points each:

[e] Bruckner’s late symphonies use a “tuba” that this composer designed to bridge an acoustic gap between the French horns and trombones. Bruckner first heard this composer’s tuba in its debut at the first Bayreuth festival.

ANSWER: Richard **Wagner** [or Wilhelm Richard **Wagner**] (Wagner commissioned the Wagner tuba for his *Ring Cycle*.)

[h] Charles Gounod’s *St. Cecilia Mass* is the only piece that calls for this instrument invented by Jean-Baptiste Vuillaume (“v’wee-YOHM”). The Montreal Symphony is the only ensemble that owns one of these instruments, which are lever-operated due to their size.

ANSWER: **octobass** [or **octobasse**]

[m] Many performances of this piece use a custom bass trombone with a second slide to play a B–F glissando in its fourth movement. A third bassoon adds a running countermelody to the recapitulation of an earlier movement in this piece that is based on Croatian part-singing.

ANSWER: Béla Bartók’s **Concerto for Orchestra** (Bartók wrote that bass trombone part for an F bass trombone. Modern-day bass trombonists play B-flat bass trombones, on which that glissando is unplayable.)

<Jacob Egol, Classical Music and Opera>

14. In 2021, this company's CEO was criticized for her incredibly bullish prediction that Tesla was worth \$3,000 a share. For 10 points each:

[m] Name this investment company with a biblically-inspired name, which was founded by the evangelical Christian investor Cathie Wood. It manages ETFs with exposure to disruptive technologies.

ANSWER: **ARK** Invest [or **ARK** Investment Management LLC]

[e] Early in 2021, Michael Burry opened a position against Tesla. Burry's earlier bet against the housing market prior to the 2007-2008 recession was detailed in this Michael Lewis book adapted into a 2015 film by Adam McKay.

ANSWER: *The **Big Short***

[h] This other evangelical Christian investor provided the seed investment for ARK's initial four ETFs. This investor was indicted for wire fraud in 2022 following the \$30 billion collapse of his firm Archegos Capital.

ANSWER: Bill **Hwang** [or Sung Kook **Hwang**]

<Caleb Kendrick, Modern World>

15. Coexistence curves separate parts of these diagrams. For 10 points each:

[e] Name these planar diagrams in which curves demarcate discontinuous changes in physical properties on a plot of pressure versus temperature.

ANSWER: **phase** diagrams

[m] Curves on phase diagrams where the second derivative of Gibbs free energy equals zero are named after this word. This is the first word in the name of a mechanism in which a single phase spontaneously separates into two.

ANSWER: **spinodal** [accept **spinodal** curve or **spinodal** decomposition]

[h] This name is given to a region on a phase diagram where a mixture exists as two or more phases. When these regions are present in liquid states, spinodal decomposition occurs via oiling out.

ANSWER: **miscibility gap**

<Geoffrey Wu, Chemistry>

16. In a 2020 paper, a non-Men At Work-affiliated Colin Hay argues that this theory is partly responsible for scholarly confusion about the 2008 financial crisis. For 10 points each:

[h] Name this framework of political economy developed in a 2001 book by Peter A. Hall and David Soskice, which compares ideal-type liberal market economies and coordinated market economies.

ANSWER: **varieties of capitalism** [accept, but DO NOT REVEAL, *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*]

[e] Varieties of capitalism theories posit that this phenomenon is at least partly a function of institutions. Ricardo illustrated this phenomenon through the example of England and Portugal trading wine and cloth.

ANSWER: **comparative advantage**

[m] Varieties of capitalism theorists synthesize literatures such as this economist's neo-corporatism theory. This thinker argued that interest groups slow change through "institutional sclerosis" in *The Rise and Decline of Nations*.

ANSWER: Mancur **Olson** ("MAN-sur OHL-sun") [or Mancur Lloyd **Olson**, Jr.]

<Henry Atkins, Social Science>

17. An intensity distribution derived from this approximation explains the appearance of Airy disks. For 10 points each:

[m] Name this approximation that is valid under a namesake "condition" which states that the square of the largest width is significantly less than lambda times the distance between two planes.

ANSWER: **Fraunhofer diffraction** equation [or **far-field diffraction**; prompt on **Fraunhofer** or **far-field** by asking "what physical phenomenon does that approximate?"]

[h] This theorem is used to calculate the Fraunhofer diffraction from multiple identical apertures. This theorem is derived by viewing the 2D convolution of aperture functions and corresponding delta functions as a Fourier transform.

ANSWER: **array** theorem

[e] The array theorem can be applied to describe diffraction from these devices that consist of arrays of equally spaced identical slits. CD tracks act as these optical devices.

ANSWER: diffraction **gratings** [or transmission **gratings**]

<Geoffrey Wu, Physics>

18. A disastrous sexual encounter with this person inspired a poem whose three stanzas begin respectively with the words “tired,” “tortured,” and “tortuous.” For 10 points each:

[h] Who is called a “succuba eviscerate” in the suppressed poem “Ode”? One of this person’s mental breakdowns is the subject of a prose poem that compares their “teeth” to “accidental stars with a talent for squad-drill.”

ANSWER: Vivienne Haigh-Wood Eliot [or Vivienne Haigh-Wood; prompt on Eliot; prompt on answers describing Thomas Stearns Eliot’s first wife] (The prose poem is “Hysteria.”)

[m] In “Ode,” Eliot describes “silence from” this metaphorical place as “synchronous” with “subterrene laughter.” A collection of Eliot essays titled for this place includes “Hamlet and His Problems.”

ANSWER: the sacred wood [prompt on partial answer]

[e] The epigraph to “Ode” is from this play, which Eliot claims is “Shakespeare’s most assured artistic success” in “Hamlet and His Problems.” This play’s title general allies with Tullus Aufidius and the Volscians against Rome.

ANSWER: Coriolanus [or *The Tragedy of Coriolanus*]

<Arya Karthik, British Literature>

19. Fleischer et al.’s response to Alan Mikhail’s book *God’s Shadow* notes that many trade books use this field to make dubious claims about people and processes that “changed the world.” For 10 points each:

[m] Name this loose subfield associated with scholars like C. A. Bayly and Sven Beckert that studies historical connections, patterns of exchange, and cross-regional integration.

ANSWER: global history [prompt on world history]

[e] Both C. A. Bayly’s *The Birth of the Modern World* and Jürgen Osterhammel’s *The Transformation of the World* are global histories of this century. Eric Hobsbawm wrote a trilogy on the “long [this century].”

ANSWER: 19th century [or 1800s]

[h] One competing paradigm to global history is a perspective coined by Shmuel Eisenstadt that proposes “multiple [these concepts].” According to Eisenstadt, these concepts are the product of region-specific cultural trajectories.

ANSWER: modernities [or multiple modernities; accept modernity]

<Henry Atkins, Other History>

20. An essay that compares the high rate of tattoos among both prison inmates and Papuans argues that the removal of this concept is synonymous with “the evolution of culture.” For 10 points each:

[h] An inflammatory 1908 manifesto argues that what specific concept is an economically wasteful appeal to children and criminals?

ANSWER: ornament [or ornamentation; accept Ornament and Crime; accept Ornament und Verbrechen]

[e] In *Ornament and Crime*, Adolf Loos attacked the decorative sensibilities of this then-popular style of architecture. Hector Guimard’s curved, iron entrances to the Paris Metro are in this Belle Époque style.

ANSWER: Art Nouveau [or Jugendstil, Stile Liberty, Modernisme, or Modern Style]

[m] Chicago’s skyscrapers inspired Loos, who submitted a single huge Doric column as a design for this building. Eero Saarinen also submitted a design for this Chicago skyscraper, which is topped by neo-Gothic buttresses.

ANSWER: Tribune Tower

<Henry Atkins, Other Fine Arts>