**2021 National All-Star Academic Tournament**

**Round 7 – Tossups**

1. After abstraction of a hydrogen, an atom of this element is inserted into a C-H bond in its namesake "rebound mechanism." Both zinc and copper are found in the active site of a eukaryotic enzyme named for a compound of this element. Compounds containing this element are released in the "respiratory bursts" of phagocytes. Cytochrome P450s are part of a superfamily of enzymes that insert one atom of this element into their substrates. Two atoms of this element are present in an anion that undergoes a dismutase reaction catalyzed by SOD; that reaction reduces the number of "reactive" species named for this element. This is the heavier element present in a compound broken down by catalase. For 10 points, name this element bonded to hydrogen in hydrogen peroxide.
ANSWER: **oxygen** [or **O**; accept reactive **oxygen** species or **monooxygenase**s; prompt on superoxides by asking "what element does that ion contain?"]
<Science Biochemistry - Vishwa Shanmugam>

2. A model proposed by Tett and Burnett holds that "expression" of these qualities are "activated" by situational cues received while on the job. Languages evolve to encode socially relevant examples of these qualities, according to the lexical hypothesis. These qualities are divided into "cardinal," "central," and "secondary" categories in Gordon Allport's theory of them. Using factor analysis, Raymond Cattell identified 16 different "source" examples of these qualities. The acronym OCEAN or CANOE represents the five different groupings of these qualities within the Big Five model. These qualities include "neuroticism," "openness to experience," and "extroversion." For 10 points, name these behavioral characteristics which define one's personality.
ANSWER: personality **trait**s [or personality **factor**s until "factor analysis"; prompt on personality]
<Social Science Psychology - Geoffrey Chen>

3. Gary and Rose Neeleman wrote a 2017 book that describes how 55,000 soldiers were tasked with obtaining this resource during World War II. For *Truth* magazine, W. E. Hardenburg wrote scathing accounts of the Arana Brothers' mistreatment of indigenous peoples who extracted this resource. The Treaty of Petropolis granted one country the ability to extract rich reserves of this resource in the state of Acre. E.D. Morel attacked a system of extracting this resource known as "red" this resource. Henry Ford established the failed settlement of Fordlandia to extract this resource, and a "boom" in this resource led to the growth of Manaus. For 10 points, the Force Publique enforced the brutal extraction of what resource in the Belgian Congo used for items such as tires?
ANSWER: natural **rubber** [or ***Hevea brasiliensis***]
<History World - Hari Parameswaran>

4. A poem by this author describes returning soldiers who cannot "holler down the lions in this air" and states, "nothing ever taught us to be islands." Another of this author's poems describes a girl who "gets sick of a rose" and wants to "strut down the streets with paint on my face." This author of "a song in the front yard" wrote a poem whose central figures "keep on putting on their clothes / and putting things away," are "Mostly Good," and "have lived their day." That poem by this poet of "Gay Chaps at the Bar" describes an "old yellow pair" for whom "dinner is a casual affair." This author wrote about people who "sing sin," "thin gin," and "die soon." For 10 points, name this Chicago-based poet of "The Bean Eaters" and "We Real Cool."
ANSWER: Gwendolyn (Elizabeth) **Brooks**
<Literature American - Eve Fleisig>

5. Tim Scholl's 1999 book about this ballet contends that its protagonist is ultimately "the same character" as Brunnhilde in Wagner's operas. Moira Shearer, who originally portrayed a character in this ballet named for a crystal fountain, took over for Margot Fonteyn in a lauded 1946 London production of this ballet. The protagonist of this ballet is married in a ceremony attended by Puss-in-Boots, and earlier chooses between four suitors in this ballet's Rose Adagio. Some stagings of this ballet use non-ballet shoes and a non-dancing role for the Lilac Fairy. Carabosse **(kah-HAH-bus)** curses Aurora to suffer consequences of a pricked finger in this ballet. For 10 points, name this 1890 Tchaikovsky ballet about a princess who doesn't wake up for a hundred years.
ANSWER: *The* ***Sleeping Beauty*** [or ***Spyashchaya krasavitsa***]
<Arts Ballet/Dance/Musicals - Matt Weiner>

6. Joe Ruffin was nearly lynched in this state near Carswell Grove, causing the Jenkins County Riot. Two prominent members of the Venable family owned a quarrying company based in this state. Though he was likely the actual perpetrator, Jim Conley testified that an employee of this state's National Pencil Company killed Mary Phagan, leading to the lynching of that man, Leo Frank. The second wave of the KKK was inaugurated at Stone Mountain in this state. A speech given at this state's 1895 Cotton States and International Exposition endorsed a society "separate as the fingers, yet one as the hand." That speech named for a city in this state declares "Cast down your bucket where you are!" For 10 points, name this state where Booker T. Washington gave the Atlanta Compromise speech.
ANSWER: **Georgia**
<History American (1865-1945) - Vishwa Shanmugam>

**Note to moderators: Please read answerline carefully** 7. The sum of the products of the branch form of these two quantities is always zero in a lumped network, by Tellegen's **(tell-UH-henz)** theorem. The spatial and time derivatives of these two quantities are related by the two telegrapher's equations. Devices are considered passive if the curve defined by these two quantities lies only in the first and third quadrants; that curve is a device's characteristic curve. The sum of one of these quantities around a loop and the sum of the other through a node are both zero, by Kirchhoff's rules. For a resistor, the total power dissipated is equal to the product of these two quantities across it. For 10 points, resistance is related by Ohm's law to what other two quantities?
ANSWER: **current** and **voltage** [accept in either order; accept answers that replace “current” with **I**; accept answers that replace “voltage” with **V** or electric **potential** difference or scalar **potential** difference; accept **I-V** curves]
<Science Physics - Geoffrey Chen>

8. One king of this location was born in the Boösaule **(boo-aw-sawl-ee)** Cave before being kidnapped by the Corybantes **(kor-ee-bahn-tees)** and taken to Byblos **(bib-lohs)** to be raised. In addition to Epaphus **(eh-pa-fuss)**, another king of this location was the husband of Achiroe **(aw-hee-roh-ee)** and father of this location's namesake. Another king of this location attempted to sacrifice Heracles **(hair-uh-clees)** but was instead killed when Heracles broke the chains placed on him. In addition to Belus **(beh-luss)** and Busiris **(bu-sie-ris)**, this location was ruled by a namesake king who had all but one of his sons killed by the Danaides **(dah-nah-eye-dees)**. Serapis **(sair-ah-pis)** was a Hellenized god worshipped in this location. While stranded in this location, Menelaus **(men-eh-lah-ohs)** fights the shapeshifting Proteus **(proh-tee-us)** to find a way to return to Sparta. For 10 points, name this location whose local deities included Ra and Isis.
ANSWER: **Egypt** [accept **Aegyptus**; prompt on the Nile; do NOT accept or prompt on "Africa"]
<RMP Greek/Roman Myth - Bradley McLain>

9. A poet born in this country beseeches the "children of the Earth" to witness how Spain "is dividing her energy among the animal kingdom, the tiny flowers, the comets and men." That poet from this country bemoans "I will die in Paris on a rainy day" in the poem "Black Stone on a White Stone." Don Federico's baby is eaten by rats in this country, which is home to the poet of *The Black Heralds* and *Trilce* **(TREEL-say)**. Jaguar kills a snitch after Cava steals a chemistry test from a military academy in this country. Pedro Camacho has a mental breakdown while working at Radio Panamericana in this country, which is the setting of *The Time of the Hero*. For 10 points, name this country home to César Vallejo **(say-ZAR vai-YAY-hoh)** and Mario Vargas Llosa **(YOH-sah)**?
ANSWER: **Perú**
<Literature World / Classical / Misc - Ganon Evans>

10. Roderick Chisholm's namesake paradox centers on conditional examples of these statements, which are analyzed in a branch of modal logic founded by G. H. von Wright **(rick-TUH)**. Simon Blackburn's "quasi-realism" contends that we treat these statements as if they express real properties. The fact that these statements do not reflect their speaker's attitudes in embedded contexts, like conditional antecedents, gives rise to the Frege-Geach problem. C. L. Stevenson and A. J. Ayer argued that these statements function like the words "boo" and "hurrah," a view known as emotivism. Hume argued that these statements cannot be derived from descriptive "is"-statements. For 10 points, describe these statements, which include claims about what is "good" and what "people should do."
ANSWER: **moral** statements [accept any answer describing **moral** or **ethical** language; or **normative** statements; or **prescriptive** statements; or **ought**s; or **deontic** logic; or **deontic** modals]
<RMP Philosophy/Thought - Geoffrey Chen>

11. Harriet Washington related being yelled at by a leader of this movement who was to headline a canceled forum organized by Al Sharpton in October 2019. The OAMF group distributed cards advocating for this movement with Halloween candy. Tara Zandvliet **(zand-FLEET)** was charged with "gross negligence" for actions furthering this movement by issuing over a quarter of all exemptions in San Diego. In June 2021, Joanna Overholt attempted to stick a key and bobby pin to her neck to prove the ideas of this movement. Brian Deer demonstrated fraudulent research in a 1998 *Lancet* article advancing this movement by Andrew Wakefield. Robert F. Kennedy, Jr. is a major advocate of, for 10 points, what movement advocates not immunizing children against communicable diseases?
ANSWER: **anti-vaccination** movement [or **antivax**; accept word forms like **antivax**xers; accept **vaccine skepticism**; accept more specific answers such as **skepticism** towards the COVID-19 **vaccine**]
<Current Events - Matt Weiner>

12. The crying speaker of a poem by this poet sees "one huge star" which is "eyeing me straight in the eye, / Terrorizing me with imminent death." This poet notices, "the dark blue radiance of his eyes / Is covered by the final terror" in the poem "To Death." This poet wrote, "I have much to do: I must kill my memories" in the poem "The Sentence." A "sort of smile slid across" the face of a woman who asks this poet, "Can you describe this?" in the prose section "Instead of a Preface." The speaker says, "Weep not for me, mother," in the section "Crucifixion," which is part of a poem this poet wrote about the seventeen-month imprisonment of their son Lev. For 10 points, name this Russian Acmeist poet of *Poem Without a Hero* and *Requiem.*
ANSWER: Anna **Akhmatova** [or Anna Andreyevna **Gorenko**]
<Literature European - Caroline Mao>

13. The McDonald-Kreitman test was invented to test for selection in this genus's *Adh* locus. The time-course of speciation in 119 species pairs of this genus was analyzed by Jerry Coyne and H. Allen Orr. Muller's morphs classify mutations in this genus. Margaret Kidwell showed that crosses between wild males and lab-raised females in this genus showed hybrid dysgenesis caused by P-elements. Theodosius Dobzhansky studied genetic polymorphism in the *subobscura* member of this genus. Like other dipterans **(DIP-ter-uhnz)**, this genus has polytene chromosomes that undergo frequent inversions. The first known sex-linked trait was a white-eyed mutant in this genus discovered by Lilian and Thomas Hunt Morgan. *Melanogaster* **(Mel-eh-no-gas-ter)** is a species in, for 10 points, what model genus of fruit fly?
ANSWER: ***Drosophila*** [accept ***Drosophila*** *melanogaster* or ***Drosophila*** *subobscura*;prompt on fruit fly or *D. melanogaster* or *D. subobscura* before they are mentioned by asking "what is its genus name?"]
<Science Biology - Shan Kothari>

14. This composer's second violin sonata has the violin play repeated quarter-note pizzicato G major chords before the piano enters in A-flat major at the start of its "Blues" second movement. The "Vif et agité" fourth movement of a string quartet by this composer begins with all parts playing eighth-note tremolos in 5/8 time. This composer wrote a piano suite that dedicates each of its five movements, including "Ouiseaux tristes" **(wee-SOH treest)**, to a different member of Les Apaches. This composer's String Quartet in F Major was rejected by his teacher Gabriel Fauré. In a piece by this composer of *Miroirs*, instruments of the orchestra take turns playing a crescendoing melody over a snare drum ostinato. For 10 points, name this composer of *Boléro*.
ANSWER: Maurice **Ravel** [or Joseph Maurice **Ravel**]
<Arts Music - Shan Kothari>

15. In a novel set in this modern day country, a man clamps Fleury's head to a vise to keep it still for a daguerreotype, and Dr. Dunstaple drinks rice-water stool to disprove Dr. McNab's theories about cholera. This country is the setting of a novel where a character practices polo while skipping a bridge party hosted by a tax collector. Lucy and the Collector are among those besieged in a fictional city in this country in a novel in J. G. Farrell's *Empire* trilogy. In a novel in this modern day country, a pair of broken field glasses becomes evidence in a trial prosecuted by a woman disoriented by an echo, after which her fiancé, Ronny Heaslop, ends their engagement. For 10 points, name this country where Adela Quested accuses Dr. Aziz of rape in an E. M. Forster novel titled *A Passage to* it.
ANSWER: British **India** [or the British **Raj**; or the Republic of **India**; accept *A Passage to* ***India***] (the J. G. Farrell novel is *The Siege of Krishnapur*)
<Literature British - Shan Kothari>

16. For this holiday, Conservative Jews began a recent tradition of lighting yellow *yahrzeit* **(yar-zite)** candles. In Jerusalem, six beacons are lit to open the state ceremonies for this holiday. On this day, many participate in a three-kilometer "March of the Living." **(Emphasize)** *Two minutes* of silence are observed at 10 AM after an air raid siren goes off on this holiday in Israel, which typically happens on the 27th of Nisan **(nih-sawn)**. This holiday joins Israeli Memorial Day, Independence Day, and Jerusalem Day as the main four "modern" Jewish holidays. The opening ceremony for this day takes place at Yad Vashem **(yahd vah-shehm)**. The Garden of the Righteous Among the Nations was created on this day in 1962. For 10 points, identify this holiday that commemorates victims of a genocide during World War II.
ANSWER: **Holocaust Remembrace** Day [or **Holocaust Day**; or **Yom HaShoah**; or **Yom Hazikaron laShoah ve-laG'vurah**; or **Holocaust and Heroism Remembrance Day**; or **Martyrs' and Heroes' Remembrance Day**; or **Holocaust Memorial Day**; or other answers indicating a day on which observants **remember the Holocaust** as long as they do not contain the word "international"; do not accept "International Holocaust Remembrance Day"]
<RMP Non-Christian/Bible Religion - Clark Smith>

17. For sending funds in support of people displaced by this event, Elvis Presley was made an honorary citizen of the country it occurred. Photographs of lynched secret police members during this event deliberately display their paybooks to show that they made more money than an average worker. The Dudas **(DOO-dash)** gang carried out extrajudicial killings during this event which began after a crowd stormed a radio building. Tensions prior to this event were heightened by the show trials of Raoul Wallenberg and Laszlo Rajk **(RIKE)**. The leader of this event was executed after leaving the Yugoslavian embassy under a false promise of safety from Janos Kadar **(YA-nosh KAH-dar)**. Imre Nagy **(EEM-ruh NAJH)** led, for 10 points, what 1956 revolt which the Soviets crushed by sending tanks into Budapest.
ANSWER: **Hungarian Revolution** of 1956 [accept **Hungarian Uprising** or **Soviet Invasion of Hungary** or obvious equivalents]
<History European 1914-present - Jakob Boeye>

18. Henri Matisse **(ohn-ree mah-tees)** pawned and lost his engagement ring to purchase a painting by this artist from Ambroise Vollard **(um-BWAHZ VOH-lahd)**. Like Paul Gauguin, this man served as an inspiration to *Les Nabis* **(nah-bee)**, whose members crowd around one of his paintings in an *Homage to* him by Maurice Denis **(duh-nee)**. A man with dark clothes and a cane sits below a bed that a nude woman is reclining on in a painting by this artist. This student of Camille Pissarro **(PEE-suh-roh)** painted two men playing a game with a wine bottle between them in what was once the most expensive painting sold at auction. Early cubists were inspired by this artist's blocky brushstrokes while depicting Mont Sainte-Victoire **(moan SANT vik-TWAHR)**. For 10 points, name this French Post-Impressionist of *Modern Olympia*, *The Card Players* and numerous still-lifes.
ANSWER: Paul **Cezanne** [or ***Homage to Cezanne***]
<Arts Painting - Ganon Evans>

19. This type of system is necessary to generate a hypervelocity star in the Hills mechanism of HVS generation. Secular perturbations in one of these systems can cause large amplitude oscillations between the eccentricity and inclination in the Kozai mechanism. A simplifed form of this system is the subject of the Sitnikov problem. The Jacobi **(yah-KOH-bee)** integral is the only known conserved quantity for a circular restricted type of this system. Trojans occupy some of the 5 constant-pattern solutions for these systems termed Lagrange points. Henri Poincare? **(pwan-kah-RAY)** proved that this type of system has no analytic solution. For 10 points, identify this type of system formed by the Sun, Earth, and Moon influencing each other through gravity.
ANSWER: **three-body** systems [or **three-body** problem; or circular restricted **three-body** problem; accept **trinary** star system; accept hierarchical **triple** star system; prompt on n-body system or n-body problem with "what is the value of n?"; prompt on orbits]
<Science Astronomy - Geoffrey Chen>

20. Charlotte Smith proposed a tax on bachelors and women who owned these objects. A pro-temperance book by Frances Willard centers on one of these objects named Gladys. Annie Londonderry traveled around the world with a Sterling-produced model of these objects. Other examples of these objects include the Colson Clipper and Western Flyer. Susan B. Anthony claimed these objects "did more to emancipate women than any one thing in the world." The Van Cleve model of these objects was invented in Dayton, Ohio by the Wright Brothers. Helena Swanwick helped developed bloomers and other pant-like women's clothing for usage with these objects. For 10 points, name these objects manufactured by Schwinn, models of which include the penny-farthing.
ANSWER: **bicycle**s [or **bike**s; or **velocipede**s; or safety **bicycle**s; prompt on Colson Clipper, Western Flyer, or penny-farthing before each is read with "That is a model of what general product?"]
<History American (1865-1945) - Ganon Evans>

21. A shrine dedicated to the cult of this figure was recently found underneath the stairs of the *Curia Julia* **(cyoo-ree-ah ju-lee-ah)**. This figure founded the Arval Brotherhood with the eleven remaining sons of his adoptive mother. After defeating Acron **(ah-crohn)** in single combat, this figure established the precedent of the *spolia opima* **(spoh-lee-ah oh-pee-mah)** by dedicating the captured arms and armor to Jupiter. After disappearing during a solar eclipse, this figure appeared before Proculus **(proh-kyu-luss)** Julius as the deified Quirinus **(queer-i-nuss)**. This figure used the *Consualia* **(kon-soo-ah-lee-ah)** as a ruse to abduct the Sabine **(say-by-n)** women. To appease the spirit of his dead twin brother, this figure established the *Lemuria* **(leh-moo-ree-ah)**. Remus was the brother of, for 10 points, what legendary founder and first king of Rome?
ANSWER: **Romulus** [accept **Quirinus** before mention]
<RMP Greek/Roman Myth - Rahul Rao - Pothuraju>

**2021 National All-Star Academic Tournament**

**Round 7 – Bonuses**

1. This period is considered to have ended with the "switch in time that saved nine." For 10 points each:
[10] Name this period during which the Supreme Court took an activist role in striking down anti-business legislation. This era is named for a 1905 case which overturned a law limiting working hours for bakers.
ANSWER: ***Lochner*** era [prompt on *Lochner v. New York* by asking “which party of the lawsuit names the period?”]
[10] Justice Owen Roberts supported the constitutionality of these laws in the "switch" in *West Coast Hotel Co. v. Parrish*, ending the *Lochner* era. One of these laws in Washington, D.C. was previously struck down in the *Adkins* case.
ANSWER: **minimum wage** laws
[10] After *West Coast Hotel*, a minimum wage was established under the Fair Labor Standards Act, part of this general reform program. The first federal minimum wage was established under this FDR program's National Industrial Recovery Act before being struck down.
ANSWER: **New Deal**
<History American (1865-1945) - Steven Liu>

2. While practicing this activity, one man asks another "What's romance?", to which the other responds, "a love story with a happy ending." For 10 points each:
[10] Name this activity. At the start of a play, a man points out to his friend that his girlfriend has not shown up to three practices in a row for this activity because he beat her on Sunday.
ANSWER: **ballroom dancing** [accept **waltz**ing; accept word forms; prompt on dancing alone with "What type of dancing?"]
[10] Sam teaches Willie ballroom dancing in *Master Harold...and the Boys*, a play by this South African author of *Blood Knot*.
ANSWER: Athol **Fugard** [or Harold Athol **Fugard**]
[10] The Royal Court Theatre put on a 2018 performance of Fugard's play *Hodoshe's Work Team* featuring videos of Theresa May dancing in this type of location. This type of location titles a Fugard play where John and Winston occupy the roles of Creon and Antigone.
ANSWER: **island**s [accept *The* ***Island*** or Robben **Island**]
<Literature World / Classical / Misc - Ganon Evans>

3. During this man's trip through the Bryansk **(bree-ahnsk)** Forest he meets and defeats a bandit with a murderous whistle, Nightingale. For 10 points each:
[10] Name this Russian *bogatyr* **(boh-gah-teer)** who is paralyzed until age 33, when he is given tremendous strength by Svyatogor **(svee-toh-gor)**.
ANSWER: **Ilya** Muromets
[10] Ilya **(ee-lee-ah)** may be based on a real person who had this vocation, which in Russian Orthodoxy is supervised by archimandrites. In the West, these people belong to orders such as the Benedictines and Cistercians.
ANSWER: **monk**s
[10] Ilya defeats a tribe known by this name, which may be an old Russian term for the Kipchaks or Cumans. Alexander Borodin **(bohr-oh-deen)** composed a set of "dances" named for these people.
ANSWER: **Polovtsi** [or **Polovtsian** Dances]
<RMP Non-Greek/Roman Myth - Matt Weiner>

4. Muonium can be described by the Bohr model because it has one electron, making it "like" this quantum mechanical system. For 10 points each:
[10] Name this easy to model system consisting of a proton bound to an electron.
ANSWER: **hydrogen** atom [or **H**; accept **hydrogen-like** atoms]
[10] Introducing a quantum defect allows this scientist's formula for hydrogen-like systems to be applied to their namesake atoms, which have a single excited electron with an extremely high principal quantum number.
ANSWER: Johannes **Rydberg** [accept **Rydberg** atoms or **Rydberg** formula]
[10] When deriving the Hamiltonian for H2+ from that of hydrogen, this mathematical term accounts for the Pauli exclusion principle. It appears alongside two similar terms that account for electrostatic repulsion and the overlap of atomic orbitals.
ANSWER: **exchange** integral [or **exchange** interaction; prompt on J or K]
<Science Chemistry - Vishwa Shanmugam>

5. The most popular species of this animal is native to Northern Syria where it is colloquially known as "Mister Saddlebags" because it stores food in its cheeks. For 10 points each:
[10] Name these popular rodent pets with "golden" and "Campbell's dwarf" species. Zorb water walking balls were inspired by balls named for these animals.
ANSWER: **hamster**s [accept golden **hamster**s or Syrian **hamster**; accept Campbell's dwarf **hamster**]
[10] Hamsters are used to forage for millet in this plateau formed around the Ordos Loop of the Yellow River in Shaanxi **(shan-SHEE)** known for its yellow silt.
ANSWER: **Loess** Plateau [or **Huángtǔ** Gāoyuán]
[10] Vsevolod Roborovsky **(ve-SE-voe-lod roe-boe-ROV-skee)** named a species of hamster on his travels to this region. Breeds of dogs native to this region include an Apso named after its capital and a breed whose most expensive member, a puppy named “Big Splash,” sold for $1.5 million in 2011.
ANSWER: **Tibet**, China
<Geography - Ganon Evans>

6. In a story titled "Ordeal by [this activity]," Millicent Boyd reads plagiarized Marcus Aurelius quotes at Mitchell Holmes in a failed attempt to keep him calm while engaging in this activity. For 10 points each:
[10] Name this activity that is the subject of banal anecdotes recounted by the Oldest Member in stories such as those in the collection *The Clicking of Cuthbert*.
ANSWER: **golf**
[10] The Oldest Member's golf stories are by this author. This author’s most famous character, who is referred to as *My Man* and *Inimitable* in two collections, works as a valet.
ANSWER: Pelham Grenville **Wodehouse** (the valet is Jeeves)
[10] The Oldest Member narrates Wodehouse's story "Rodney Has a Relapse," whose title character is a light-hearted depiction of this other author and creator of Winnie the Pooh.
ANSWER: Alan Alexander **Milne**
<Literature British - Joseph Krol>

7. This ruler's death prompted Frederick II of Prussia to claim that "The Messalina of the North is dead. Morta la Bestia." For 10 points each:
[10] Name this empress of Russia and daughter of Peter the Great. The accession of her nephew Peter III to the throne following her death became known in Prussia as the Miracle of the House of Brandenburg.
ANSWER: Empress **Elizabeth** Petrovna [or **Yelisaveta** Petrovna]
[10] Empress Elizabeth led Russia through most of this conflict, which lasted from 1756 to 1763 and was fought on five continents. Its North American theater is known as the French and Indian War.
ANSWER: **Seven Years' War**
[10] The commander-in-chief of the Russian army during the late stages of the Seven Years' War was Count Pyotr of this ancient boyar family. Another member of this family, Sergei, was the first lover of Catherine the Great upon her arrival in Russia.
ANSWER: **Saltykov**
<History European 1400-1914 - Rodrigo Rose>

8. This piece opens with the right hand playing the melody "B, B, E, G, G, F sharp.” For 10 points each:
[10] Name this E minor piece whose main melody plays over a series of chords ornamented with grace notes. This piece's E major *Più Lento* section lacks the dissonant minor seconds and rapidly-resolved ninths found in its first section.
ANSWER: “**Wrong Note**” Etude [accept **Étude Op. 25, No. 5**]
[10] The "Wrong Note" Etude was written by this Polish composer whose other etudes include his "Torrent" and "Revolutionary."
ANSWER: Frédéric François **Chopin** [or Fryderyk Franciszek **Chopin**]
[10] Many of these short, lively works in 3/4 by Chopin feature dissonant sections. These Polish dances whose downbeats are typically unaccented form the largest body of any genre composed by Chopin.
ANSWER: **mazurka**s
<Arts Music - Noah Sheidlower>

9. The Grashof condition governs the planar four-bar class of these systems. For 10 points each:
[10] Name these mechanical systems governed by the Kutzbach criterion. These systems consist of rigid bodies with at least two nodes connected by joints.
ANSWER: mechanical **linkage**s [or **kinematic chain**s; prompt on mechanisms]
[10] The mobility of a linkage, defined as the linkage's number of these entities, is given by the Kutzbach criterion. Rigid bodies have 6 of these parameters, and gimbal systems have three, though one can be "lost" to gimbal locking.
ANSWER: **degrees of freedom** [prompt on DOFs or DFs; prompt on axes or axis; antiprompt on axes of rotation]
[10] This property of linkages and simple machines is equal to the ratio of output force to input force. For a lever, this quantity is equal to the ratio of the distance of the fulcrum to each of its ends.
ANSWER: **mechanical advantage** [prompt on MA]
<Science Physics - Steven Liu>

10. During mass, this substance is kept in a thurible **(thuhr-ih-bul)**. For 10 points each:
[10] Name this substance that is swung from side to side in that kind of censer **(sehn-ser)**. A type of this substance joins gold and myrrh among the gifts the Wise Men gave the infant Christ.
ANSWER: **incense** [or frank**incense**]
[10] A giant thurible called "the Artichoke" is used in the cathedral of a city named for this saint, which is more famous for the "Botafumeiro" **(boh-ta-foo-meh-ee-roh)** thurible that has to be operated by eight men. That cathedral is the endpoint of this saint's namesake pilgrimage route in Spain.
ANSWER: Saint **James** [or Way of Saint **James**; or **Santiago** de Compostela]
[10] The Roman Missal **(miss-ahl)** uses this typographical practice to print instructions, such as those on how to use incense, in sections called rubrics. In many Bibles, Dominical **(doh-men-ih-cahl)** words are often emphasized through this typographical practice.
ANSWER: they are printed in **red** [or **red letter** Bible]
<RMP Christian/Bible Religion - Clark Smith>

11. These people established a powerful kingdom at Utatlán. For 10 points each:
[10] Name these people, whose leader Tecun Uman legendarily decapitated Pedro de Alvarado's horse instead of Alvarado while resisting the Spanish at the Battle of El Pinar. Rigoberta Menchu is an activist for the rights of these people.
ANSWER: **K'iche** Maya [prompt on Maya]
[10] The K'iche people mostly inhabited Guatemala, whose name comes from a word in this language that means "place of many trees." This language was used to compose the Florentine Codex.
ANSWER: **Nahuatl** [prompt on Aztec]
[10] Pedro de Alvarado was one of these soldiers who conquered Guatemala for the Spanish empire. Prior to conquering Guatemala, Alvarado assisted another of these people, Hernan Cortes, in his defeat of the Aztec Empire.
ANSWER: **conquistador**es
<History World - Hari Parameswaran>

12. Answer some questions about art forgery, for 10 points each:
[10] Han van Meegeren **(MAY-guh-run)** once baked a painting in a pizza oven to falsify these features in a forged Vermeer. These features are the product of aging and paint drying unevenly, and often present as a network of black lines.
ANSWER: **crack**s [accept **crackle**s or **craquelure**]
[10] This Italian art historian's namesake method has been used to catch many forged paintings by comparing forgeries to the artist's real paintings on minute details, like the shape of an earlobe or fingernail.
ANSWER: Giovanni **Morelli** [accept Ivan **Lermolieff**; accept **Morellian** analysis]
[10] Unfortunately, determining sculpture forgeries is much harder with Morellian analysis. Robert Driessen **(DREE-sun)** forged over 1,000 copies of this Swiss-Italian sculptor's *Walking Man* series.
ANSWER: Alberto **Giacometti**
<Arts Painting - Ganon Evans>

13. This is the main language used in a form of rhythmic poetic recitation set to lyre music, called the *mantinada*. For 10 points each:
[10] Name this language used for a verse romance by Vikentios Kornaros, which reuses characters like Heracles present in works in this language's ancient form.
ANSWER: Modern **Greek**
[10] That Vikentios Kornaros epic is considered the greatest piece of literature from this Greek location. During a stay in this location, the narrator of a novel has a one-night stand with a widow who is later publicly decapitated.
ANSWER: **Crete** (The novel is *Zorba the Greek.*)
[10] That epic, *Erotokritos*, uses a fifteen-syllable structure that was also used in the first major Modern Greek play, *Erofili*, whose interludes directly interpolate the storyline of Rinaldo and Armida from this Italian epic poem about the First Crusade by Torquato Tasso.
ANSWER: ***Jerusalem Delivered*** [or *The* ***Liberation of Jerusalem***; or *La* ***Gerusalemme liberata***]
<Literature European - Joseph Krol>

14. Taking the convex hull of the set of permutation matrices gives the set of matrices that possess this property "doubly," meaning their rows and columns both sum to 1. For 10 points each:
[10] Name this type of matrix. The Perron-Frobenius theorem implies that irreducible and aperiodic examples of these matrices have a unique left eigenvector with eigenvalue one.
ANSWER: **stochastic** matrix [or **Markov** matrix; or **transition** matrix; or **probability** matrix; do not prompt on or accept "random matrices"]
[10] Stochastic matrices store transition probabilities for finite-state Markov chains, so their entries lie between these *two* numbers. All probabilities lie between these two numbers.
ANSWER: **zero** and **one** [accept in either order]
[10] A classic example of an infinite-state Markov chain is this type of process, in which each step involves choosing a direction and moving one unit on the integer lattice. This process is called "simple" if the chain can only move to adjacent sites.
ANSWER: **random walk** [or simple **random walk**; accept **drunken walk** or **drunkard's walk**]
<Science Math - Tim Morrison>

15. In a famous critique of tariffs, this economist imagined bolstering local economies by building endless train stops between France and Spain in his short essay "A Negative Railroad." For 10 points each:
[10] Name this French thinker whose parable of the broken window argues that accidentally breaking a window is not a net benefit to society because the repairer has to bear "unseen" costs.
ANSWER: Claude-Frédéric **Bastiat**
[10] Murray Rothbard founded a group called the "Circle Bastiat" whose members belonged to this heterodox school of economics which stresses praxeology over mathematical models.

ANSWER: **Austrian** School
[10] Austrian School economist Friedrich von Wieser **("VYE"-zer)** first coined the name for this type of cost, which refers to the benefit that could have been obtained had a different alternative been chosen.
ANSWER: **opportunity** cost
<Social Science Economics - Ganon Evans>

16. During a period of this name, the GSG-9 raided a plane in Somalia that was hijacked by the Popular Front for the Liberation of Palestine in order to demand the release of prisoners. For 10 points each:
[10] The kidnapping of businessman Hanns Martin Schleyer and the hijacking of Lufthansa Flight 181 were part of what period of intense left-wing terrorism at the end of the larger "Offensive 77?"
ANSWER: **German Autumn** [or **Deutscher Herbst**]
[10] Along with the June 2 Movement, the German Autumn was led by Andreas Baader and Ulrike Meinhof's self-proclaimed "Army Faction" known by this color which is associated with communists,
ANSWER: **red** [or **rote**; or **Red Army Faction**; or **Rote Armee Fraktion**]
[10] In 1975 the June 2 Movement kidnapped Peter Lorenz, who was running as the Christian Democratic candidate for this office. In 1963 Willy Brandt hosted John F. Kennedy's visit while serving in this office before ascending to higher positions later in the decade.
ANSWER: **mayor** of West **Berlin** [or Regierender **Bürgermeister von Berlin**]
<History European 1914-present - Matt Weiner>

17. Although Lucian complained that "every city was full of upstarts" from this philosophical school, he nevertheless wrote an enthusiastic biography of his teacher Demonax, who was from this school. For 10 points each:
[10] Name this philosophical school. In the Roman empire, some of the fictional "epistles" from this school were attributed to Crates of Thebes and its founder, Antisthenes.
ANSWER: **cynic**ism
[10] Many of the Cynic epistles were attributed to this thinker from Sinope, who famously told Alexander the Great to stop blocking the sun while living in a barrel.
ANSWER: **Diogenes** of Sinope
[10] Roman commentators often praised this Cynic attribute, whose Greek name literally translates to "candid speech." Michel Foucault argued that this Greek concept requires someone to put themselves in danger by telling the truth critically.
ANSWER: ***parrhesia***
<RMP Philosophy/Thought - Joseph Krol>

18. Seven years after fictionalizing these people as Irish immigrants, the same playwright depicted Mio Romagna trying to prove the innocence of characters based on these people. For 10 points each:
[10] Both *Gods of the Lightning* and *Winterset* fictionalize what pair of anarchists who were executed in 1927 for murdering two people during a shoe factory robbery in Massachusetts?
ANSWER: Nicola **Sacco** and Bartolomeo **Vanzetti** [accept in either order]
[10] This author wrote the line "All Right we are two nations" in response to the Sacco and Vanzetti trial. That line is from a trilogy by this author with "Newsreel" and "Camera Eye" sections.
ANSWER: John (Roderigo) **Dos Passos**
[10] In Mark Binelli's *Sacco and Vanzetti Must Die!*, fictional versions of Sacco and Vanzetti begin as members of this profession. E. F. Albee, Edward Albee's grandfather, made his fortune managing people in this profession.
ANSWER: **vaudeville** performers [accept synonyms for performers; accept **comedians**; accept silent **film stars**]
<Literature American - Matt Weiner>

19. The predator satiation hypothesis posits that this strategy evolved so that seed predators would become satiated, allowing some seeds to avoid predation. For 10 points each:
[10] Name this reproductive strategy, in which plants produce large numbers of seeds synchronously with other members of the same species.
ANSWER: **mast**ing [or **mast** seeding; or **mast** fruiting]
[10] Because they provide food for rodents, mast years in North America tend to precede outbreaks of this tick-borne illness that causes a bullseye rash. It is caused by bacteria in the genus *Borrelia* **(buh-REL-ee-uh)**.
ANSWER: **Lyme** disease
[10] Lyme disease has featured in debates about the dilution effect, a term Ostfeld and Keesing coined to describe the purported influence of this ecological variable on disease risk. Simpson's or Shannon's index can be used to quantify this kind of variable.
ANSWER: bio**diversity** [or species **diversity**]
<Science Biology - Shan Kothari>

20. This city's Dan Beach Hotel features a rainbow facade designed by Yaacov Agam. For 10 points each:
[10] Name this city that contains over 4,000 International Style buildings designed by architects like Erich Mendelsohn, giving it the nickname "White City." This Patrick Geddes-designed city is home to Leon Gaignebet's Crazy House, which has wavy balconies.
ANSWER: **Tel Aviv**-Yafo
[10] Many buildings like the Max-Liebling House in Tel Aviv were heavily inspired by this German school of architecture, which was founded by Walter Gropius and included faculty like Ludwig Mies van der Rohe.
ANSWER: Staatliches **Bauhaus**
[10] Tel Aviv's Yitzhak Rabin center was designed by this Israeli architect who also designed Yad Vashem in Jerusalem. He designed Habitat 67 for the 1967 Montreal World Expo.
ANSWER: Moshe **Safdie**
<Arts Architecture - Noah Sheidlower>

21. For 10 points each, answer the following about the Great Stink of 1858:
[10] Increased water output due to flushing toilets and iron piping into this river led to sewage buildup, causing the Great Stink. The Albert Encampment intended to reduce pollution began at Westminster Bridge near the Houses of Parliament along this river.
ANSWER: River **Thames** **(temz)**
[10] This civil engineer for the Metropolitan Board of Works designed over 1,000 miles of new cement sewer networks to modernize London's sewer system. His designs are widely credited with ending the Great Stink and with decreasing cholera epidemics in Britain.
ANSWER: Sir Joseph **Bazalgette** **(BAZ-ul-jet)**
[10] Four years previously, this doctor disproved the miasma theory of cholera by tracking the 1854 Golden Square outbreak to a single water pump on Broad Street, sparking new interest in public sanitation projects to prevent disease.
ANSWER: John **Snow**
<History European 1400-1914 - Ganon Evans>