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Tossups

1. **In a play from this country, a master tells two men not to eat sugar out of a vase because it is a "delicious poison." In a play from this country, a character uses a mouse escaping a mousetrap as a metaphor for his son escaping his house arrest for a crime that was actually committed by a character nicknamed "Hard Luck." Two sisters who ladle saltwater are memorialized by a pine tree in a play by an author from this country, who described his techniques in** *The Transmission of the Flower Through the Forms*. **(*)** *The Uprooted Pine* is set in this country. In a play from here, a paper merchant fails to buy his lover out from a brothel, leading them to kill themselves. The author of two puppet plays about "Love Suicides," Chikamatsu, is from this country. For 10 points, name this country whose historical theater forms include *kyōgen* and *bunraku*.
ANSWER: **Japan** (The *kyōgen* play in the first line is *Busu*.)
<VS, World/Other Literature>

2. **With Karl Mundt, this politician co-sponsored a bill that would have required Communist organizations to be registered with a "Subversive Activities Control Board." To win election to Congress for the first time, this politician compared Helen Gahagan Douglas's voting record to that of Vito Marcantonio and made the accusation that she was (*)** "pink right down to her underwear." This politician gave a speech in which he listed his assets and liabilities before confessing that a man from Texas named Pat had sent him a cocker spaniel. That was the "Checkers Speech," delivered during this politician's campaign as Eisenhower's vice-presidential candidate. For 10 points, name this president who visited China before resigning in the midst of the Watergate scandal.
ANSWER: Richard **Nixon** [or Richard Milhous **Nixon**]
<AE, American History>

3. **Ultra-high pressure nitrogen undergoes one of these reactions, resulting in a predicted cubic-gauche structure. The glow discharge method is used to prepare plasmas to participate in this type of reaction. Isocyanate reactants are used with polyols in one reaction of this type. One property of the products of these reactions can be measured by membrane osmometry or differential light scattering. When these reactions involve free radicals, they use an initiator such as (*)** AIBN. Chain-transfer agents reduce the average molecular weight of the product of these reactions. Chloroethene and ethylene are common reactants used in this type of reaction, and they involve bonds being formed as a chain grows. For 10 points, name these reactions that create macromolecules by bonding many monomers together.
ANSWER: **polymerization** reactions [accept plasma **polymerization**, chain growth **polymerization**, or (free) radical **polymerization**]
<GR, Chemistry>

4. **A climactic scene from this film ends with the camera slowly panning over to blood dripping from a rope. Paul Schrader's original script for this film included a scene where the protagonist masturbates in his prison cell that was replaced with the protagonist bashing his head and wailing "I'm not an animal!" In another scene, this film's protagonist screams "Did you (*)** fuck my brother?" at his wife before angrily breaking down a bathroom door. Its final scene, which pays homage to *On the Waterfront*, depicts the protagonist alone in his dressing room reciting "I coulda been a contender." This film famously uses a dolly zoom to depict its protagonist's knockout loss to Sugar Ray Robinson. For 10 points, name this Martin Scorsese film about the boxer Jake LaMotta.

ANSWER: ***Raging Bull***
<CK, Other Arts>

5. **In this region, the Rimé ("ree-MAY") movement was founded in the 19th century, emphasizing non-sectarianism by gathering the teachings of the "eight systems." In this region's "treasure" tradition, masters called *tertön*s claimed to have found buried texts called *terma*s. A religious text from this region describes the passage of a recently deceased person through the (*)** *bardo*s and is called this region's Book of the Dead. In this region, the Nyingma, Sakya, and Kagyu schools make up the "Red Hat" sect, contrasted with the Gelug "Yellow Hat" sect. A religious leader of this region is chosen after correctly choosing items that belonged to his previous reincarnation. For 10 points, name this Asian region that was once led spiritually and politically by the Dalai Lama.
ANSWER: **Tibet** [or **Bod** or **Xīzàng**]
<WC, Religion>

6. **One of these people is the dedicatee of a poem that includes the remark, "Creatures of a day! What is a man? What is he not? A dream of a shadow is our mortal being." According to an apocryphal story, Scopas refused to pay Simonides for a poem about one of these people after he included too many references to Castor and Pollux. A long digression about the Hyperboreans appears in a poem about one of these people named (*)** Hippocleas. They were celebrated in poems called *epinikia*. Bacchylides wrote a poem about one of these people, Hieron of Syracuse, who was known for his chariot ability. For 10 points, Pindar wrote "victory odes" celebrating what participants in the Olympic Games?
ANSWER: Greek **athlete**s [accept **victor**s until "victory" is read; accept **Olympian**s until "Olympic" is read]
<CK, European Literature>

7. **This empire received the ambassador García de Silva Figueroa, sent by Philip III of Spain, who left a detailed account of his travels and the ruins of "Chilminara." In a book titled after a ruler of this empire, Sheila Canby examined the construction of a Royal Mosque with seven colors of tiles on the south side of its capital's Royal Square. The Peace of Amasya ended a war that saw a battle in which this empire's (*)** Qizilbash cavalry was decimated by musket fire from Selim the Grim's Janissaries. That battle, an Ottoman victory against this empire, was Chaldiran. This empire's ruler Abbas I moved its capital from Qazvin to Isfahan. For 10 points, name this Persian dynasty that ruled from 1501 to 1736, which saw the establishment of Shia Islam as the state religion.
ANSWER: **Safavid** Dynasty [or **Safavid**s; prompt on Iran or Persia]
<JL, World History>

8. **Superfluid condensates can become Mott insulators as a potential described by this term is ramped on. Retro-reflected laser beams can create a potential described by this term through the AC Stark shift; that example of these systems is used in strontium-based atomic clocks. These mathematical structures are generated by discrete translations, and the gamma point is the center of a primitive cell in one of these structures in reciprocal space. That (*)** unit cell is called the Brillouin ("bree-WANN") zone and is analogous to the Wigner–Seitz ("VIG-ner sites") construction for the "real space" type of these structures. Types of these structures include orthorhombic and triclinic, examples of these structures catalogued by Bravais ("bra-VAY"). For 10 points, name these periodic mathematical objects used to model crystal structure.
ANSWER: **lattice**s [accept optical **lattice**s or crystal **lattice**s; prompt on crystals by asking "what kind of structure do crystals exemplify?"; prompt on periodic until "structures" is read]
<GR, Physics>

9. **A Titian portrait depicts one of these people as a doddering old man flanked by two scheming grandsons. A wax sculpture of one of these people is shown crushed beneath a meteorite in Maurizio Cattelan's installation piece *The Ninth Hour*. One of these people is shown trapped in a cage-like structure in the painting *Head VI*,**

whose artist also depicted one of these people between two halves of a butchered cow in *Figure with* **(*)** *Meat*. After seeing an artist's painting of his Moorish servant Juan de Pareja, one of these people commissioned a portrait that later inspired several depictions of these people "screaming" by Francis Bacon. For 10 points, name this kind of person depicted in Diego Velázquez's *Portrait of Innocent X*.
ANSWER: **pope**s
<CK, Painting & Sculpture>

10. **This city's tallest residential building is the cylindrical Manfred Hermer-designed Ponte City, which at one point housed a 10-story-high pile of garbage. Located about 50 miles to the northwest of this city is the Cradle of Humankind, a UNESCO World Heritage site where scientists discovered fossils of the *Homo naledi* species. This capital of Gauteng province is served by the O. R. (*)** Tambo International Airport. This city is about 40 miles south of its country's executive capital of Pretoria, and its districts of Newtown and Braamfontein are linked by its Nelson Mandela Bridge. In 2002, the township of Soweto ("suh-WET-oh"), once an apartheid-era slum set aside for Black residents outside this city, was officially incorporated into this city. For 10 points, name this largest city in South Africa.
ANSWER: **Johannesburg** [or **Joburg**]
<GR, Other>

11. **This country was briefly ruled by a monarch derisively nicknamed "King Macaroni" for his Italian origin. That king was elected to rule this country after the previous monarch was deposed in a non-British Glorious Revolution. This country's Liberal Triennium was brought to an end by the invasion of the "Hundred Thousand Sons of St. Louis," an army that was sent by a northern relative of this country's (*)** Bourbon monarch Ferdinand VII. That monarch of this non-Austrian country passed an 1830 Pragmatic Sanction to allow his daughter Isabella II to succeed him, leading to several civil wars between the liberal Cristinos and the conservative Carlists. For 10 points, name this country whose monarchy was restored during a 1930s civil war by the generalissimo Francisco Franco.
ANSWER: **Spain** [or **España**]
<AE, European History>

12. **In a poem, this character describes when "then fled, O brethren, the wicked juba / and wandered wandered far / from curfew joys in the… night." Robert Hayden wrote that "ballad" about this man, who in a novel teaches himself to read by stealing a copy of John Bunyan's *The Life and Death of Mr. Badman*. In that novel, a crazed axe-wielding character named Will goads this man into murdering (*)** Margaret Whitehead. This character undertook his best-known action after a prophetic dream in which drops of blood fall on an ear of corn, according to an account written by his lawyer Thomas Gray. For 10 points, William Styron wrote a novel describing the *Confessions of* what leader of an 1831 slave uprising in Virginia?
ANSWER: **Nat** **Turner** [accept either underlined name]
<CK, American Literature>

13. **A number that characterizes this procedure equals four in structures that Martin Gardner dubbed "snarks." This procedure partitions the set of undirected graphs, according to Vizing's theorem. It is an open question whether a number characterizing this procedure equals the size of a complete subgraph that is a minor. There exists a least positive integer such that performing this procedure on a complete graph results in a clique that has only one of its namesake properties, according to (*)** Ramsey's theorem. This procedure's namesake number is usually symbolized chi ("kye"). Kempe published an incorrect proof by "patching" a result about the minimum number of properties needed for this procedure in one case. For 10 points, Appel and Haken used a computer-assisted proof to show that what graph-labelling task requires only four of the namesake properties on a planar map?

ANSWER: graph **coloring** [or vertex **coloring** or edge **coloring** or **coloring** a map; accept four-**color** map theorem or **color**s; prompt on graph <u>labeling</u> or vertex <u>labeling</u> or edge <u>labeling</u>] (The third clue is the Hadwiger conjecture.)
<CK, Other Science: Mathematics>

14. **This philosopher contrasted the "easy-going mood" with the "strenuous mood" in an essay that divides ethics into psychological, metaphysical, and casuistic ("kazh-oo-ISS-tick") questions. He compared God to a master chess player playing against novices in an essay that coined the term "soft determinism"; that essay is "The Dilemmas of Determinism." Richard (*)** Rorty extended his argument against defining truth as agreement with reality. In a critique of evidentialism, he argued that decisions must be "forced," "momentous," and "live" to be "genuine options." This philosopher's best-known book contrasts "tender-minded" rationalists with "tough-minded" empiricists. For 10 points, name this American philosopher who wrote "The Will to Believe" and *Pragmatism*.
ANSWER: William **James** (The first clue describes "The Moral Philosopher and the Moral Life.")
<GR, Philosophy>

15. **The Gerarai priestesses ceremonially married the *basilinna* to this deity during Anthesteria. Mary Beard wrote about the mutual influence between Roman iconography and the motif of this deity returning from a foreign land in the *thiasus* procession, which is depicted in Nonnus's massive epic about his invasion of India. To fulfill a promise to the shepherd Prosymnus, this deity sodomized himself on Prosymnus's tomb after returning from the (*)** underworld. This deity granted King Midas the "golden touch" after Midas treated this deity's friend Silenus hospitably. Devotees of this god carried *thyrsi* and included the killers of King Pentheus, the maenads. This god was born from Zeus's thigh after his original mother Semele was annihilated by Zeus's true form. For 10 points, name this Greek god of madness, drunken revelry, and wine.
ANSWER: **Dionysus** [accept **Bacchus** until "Greek" is read]
<JS, Mythology>

16. **In 1932, the opening ceremony of a bridge in this city was crashed by Francis De Groot, a member of the far-right New Guard, who rode in on horseback and cut the ribbon. This city was the capital of a colony where the Robertson Land Acts weakened the power of the ranching "squattocracy." In this city, Philip Cunningham led a rebellion of Irish settlers during the "Second Battle of Vinegar Hill," also called the (*)** Castle Hill Rising. Lachlan Macquarie ("LACK-lan muh-KWAIR-ee") was placed in charge of this city after John Macarthur overthrew governor William Bligh in the Rum Rebellion. James Cook's HMS *Endeavour* made its first continental landing in Botany Bay, a few miles to the south of this city. For 10 points, name this capital of New South Wales, the most populous city in Australia.
ANSWER: **Sydney**
<AP, European History>

17. **A composer with this surname used a melody from Miklós Rózsa's ("MEEK-lohsh RO-zhaw's") score for *The Killers* in his theme for the show *Dragnet*. A composer with this surname wrote an Opus 17 Piano Trio in G minor whose third movement *scherzo* ("SKAIRT-soh") uses a "Scotch snap" rhythm. That composer with this surname premiered Brahms's *Variations and Fugue on a Theme by Handel*. Brahms and that composer both wrote variations on the sad F-sharp minor fourth piece from *Bunte Blätter* ("BOON-tuh BLEH-tuh") by a composer with this surname. That composer wrote a symphony whose fourth movement in the parallel key of E-flat minor opens with a brass (*)** chorale of trombones and horns playing a series of rising fourths, has five movements, and was inspired by the coronation of an archbishop at the Cologne Cathedral. For 10 points, give this surname shared by the composer of the *Rhenish Symphony*, Robert, and his wife Clara.
ANSWER: **Schumann** [accept Robert **Schumann** or Clara **Schumann** or Walter **Schumann**; prompt on <u>Wieck</u>]
<AE, Classical Music>

18. **A poem in this collection describes the "gale of life" that "blows so hard, 'twill soon be gone: to-day the Roman and his trouble are ashes under Uricon." The last stanza of a poem in this collection tells of an Eastern king, whose would-be assassins put "strychnine in his cup, and shook to see him drink it up." It includes a poem whose dead speaker asks "Is football playing along the shore, now I stand up no more?" In addition to "On (*)** Wenlock Edge," it includes a poem describing men who "look into the pewter pot, to see the world as the world's not," noting: "malt does more than Milton can, to justify God's ways to man." For 10 points, name this collection, including "Is My Team Ploughing" and "Terence, This is Stupid Stuff," written by A. E. Housman.
ANSWER: *A **Shropshire Lad***
<CK, British Literature>

19. **ITAF factors can initiate this process, which is normally regulated by the 5-prime UTR and requires binding to the 5-prime cap. Release factors are required for this process to end. The signal recognition particle pauses this process by binding to its product. One participant in this process must be charged with fMet. In prokaryotes, this process happens after the SD sequence binds to the (*)** 16S subunit. Elongation factors ensure that this process happens accurately. Viruses including coronavirus and HIV use a frameshift to change the products of this process, and it begins at start codons such as AUG. This process consists of many small cycles where charged tRNA binds to the A site of a ribosome. For 10 points, name this process of decoding mRNA to synthesize a protein chain.
ANSWER: **translation** [accept eukaryotic **translation**, or prokaryotic **translation**; prompt on protein synthesis]
<GR, Biology>

20. **To solve a puzzle that C. L. Baker observed about dative acquisition, this psychologist conjectured that children "bootstrap" knowledge of argument structure from their knowledge of semantics. In a seminal 1988 paper with Alan Prince, this psychologist critiqued connectionist models of language acquisition, arguing that regular uses of the past tense must be default; he later revisited those arguments in his book (*)** *Words and Rules*. He wrote a 1994 book that opens by likening a spider's web-weaving and beaver's dam-building to the human capacity for language in a book that popularized Chomskyan nativism. For 10 points, name this Harvard psychologist who wrote *The Language Instinct*.
ANSWER: Steven **Pinker** (The first clue is from *Learnability and Cognition*.)
<CK, Social Science>

Bonuses

1. In the lead-up to this summit, Donald Trump, Enrique Peña Nieto, and Justin Trudeau signed the USMCA treaty, replacing NAFTA. For 10 points each:
[10] Name this summit that saw Saudi Crown Prince Mohammed bin Salman get sidelined in the "family photo." During this summit, MBS told Emmanuel Macron, "Don't worry," when talking about Yemen and the Khashoggi ("ka-SHOOK-chee") murder.
ANSWER: **G20** Summit
[10] The G20 Summit was held in Buenos Aires in this country, which is currently governed by Mauricio Macri, who won election by defeating the Peronist ("per-OWN-ist") candidate Daniel Scioli.
ANSWER: **Argentina**
[10] At the G20 Summit, the EU was represented by Jean-Claude Juncker and this former Polish statesman. As President of the European Council, he warned Britain that it could only have "hard Brexit" or "no Brexit."
ANSWER: Donald **Tusk** ("TOOSK") [or Donald Franciszek **Tusk**]
<JH, Other>

2. Organisms that can initiate this process are termed F-positive. For 10 points each:
[10] Name this process that results in horizontal gene transfer when DNA is transferred from a donor cell to a recipient cell after their pili ("PY-lye") fuse.
ANSWER: bacterial **conjugation**
[10] This species of Gram-negative bacteria can exchange genes on plasmids through conjugation. These bacteria are commonly found in the guts of most mammals and some strains can cause food poisoning.
ANSWER: *E. coli* [or *Escherichia coli*]
[10] The relaxosome complex that facilitates conjugation makes one of these structures at the OriT ("or-ee-T") site on the plasmid. The enzyme relaxase is named for the fact that these structures relieve torsional strain on DNA.
ANSWER: **nick**
<GR, Biology>

3. According to Sallust, one of the people targeted by this plot escaped assassination after being warned of it by Fulvia, the mistress of one of his opponents. For 10 points each:
[10] Name this plot by a failed consular candidate to take over Rome in 63 BC. The namesake of this plot was later killed by the forces of Gaius Antonius Hybridus at Pistoria.
ANSWER: **Catiline conspiracy** [or **Catilinarian conspiracy**]
[10] This consul and target of the Catiline conspiracy delivered the Catiline Orations to accuse Catiline before the Senate. Later in his life, he delivered a series of Philippics against Mark Antony.
ANSWER: **Cicero** [or Marcus Tullius **Cicero**]
[10] The Catiline conspiracy saw the passage of one of these laws, which declared a state of emergency and allowed consuls like Cicero to take whatever measures deemed necessary to defend the Roman Republic.
ANSWER: *Senatus **consultum ultimum*** [or **ultimate decree** of the Senate; or **final decree** of the Senate; accept **act** in place of "decree"; accept **SCU**]
<JL, European History>

4. Answer the following about everyone's favorite element, "Good Old Neon." For 10 points each:
[10] The narrator of this author's story "Good Old Neon" recounts the motives behind his suicide by crashing his car in rural Illinois. This footnote enthusiast also wrote the essay "Consider the Lobster" and novel *Infinite Jest*.
ANSWER: David Foster **Wallace**
[10] At age 16, this author wrote *The Neon Bible*, which recounts David's adolescence in rural Mississippi. This author wrote about a Boethius-loving hot dog vendor in New Orleans in his novel *The Confederacy of Dunces*.
ANSWER: John Kennedy **Toole**

[10] This lover of Simone de Beauvoir wrote about lower-class characters' struggles in Chicago in his collection *Neon Wilderness*, which includes stories like "How the Devil Came Down Division Street."
ANSWER: Nelson **Algren**
<AP, American Literature>

5. The Large Area Telescope uses pair conversion detectors to map the whole sky in this part of the electromagnetic spectrum, which is also measured by scintillation detectors. For 10 points each:
[10] Name this high-energy radiation studied by NASA's Fermi Space Telescope, which succeeded the Compton Observatory for this part of the electromagnetic spectrum.
ANSWER: **gamma** rays [accept Fermi **Gamma**-ray Space Telescope or Compton **Gamma** Ray Observatory]
[10] Karl Jansky was a pioneer of astronomy in this other part of the electromagnetic spectrum. Jansky observed that the center of the Milky Way is a strong source of this radiation surveyed by the Very Large Array in New Mexico.
ANSWER: **radio** waves
[10] This optical sky survey based in New Mexico includes the APOGEE study of galactic evolution. This survey's Baryon Oscillation Survey was designed to study early universe expansion by measuring the spatial distribution of luminous red galaxies.
ANSWER: **Sloan** Digital Sky Survey [or **SDSS**]
<GR, Other Science: Astronomy>

6. This process occurs to the protagonist at the end of a Japanese fairy tale in which he is brought to the undersea Dragon Palace as a reward for his rescue of a turtle. For 10 points each:
[10] Identify this event experienced by Urashima Taro when he opens the *tamatebako*, a mysterious jeweled box. In another myth, a man has this experience after ignoring the warning of his lover Niamh ("NEE-uv").
ANSWER: instantaneous **aging** [accept anything related to **becoming old**]
[10] That second hero who rapidly ages after returning from a fairy realm is Oisín ("oh-SHEEN"), the son of this leader of the Fianna in Irish mythology. As a child, he burned himself while cooking the Salmon of Knowledge.
ANSWER: **Finn** **MacCool** [accept either underlined name; or **Fionn** **MacCumhail**]
[10] Yayāti ("yuh-YAH-tee"), a king of a dynasty named for this object, was cursed to rapidly age due to his infidelity, but exchanged his old age with his son. Chandra, the Hindu god of this object, laughed at Ganesha when he tripped due to his own weight.
ANSWER: the **Moon** [accept the **Lunar** dynasty]
<JS, Mythology>

7. One of the best-known poems in this language expresses the speaker's love for things like the "enervating perfume of flowers" before stating "but most of all I love my brother, man." For 10 points each:
[10] Name this language of songs collected in a 16th-century book titled for the "Ballads of the Lords." A system developed in this language inspired a poem that states "I travel through your waist as through a river."
ANSWER: Classical **Nahua**tl [prompt on the Aztec language]
[10] Octavio Paz, an author from this country, wrote the aforementioned poem "Sun Stone," whose cyclical structure is inspired by a Nahuatl-language calendar developed by one of this country's pre-Columbian civilizations.
ANSWER: **Mexico**
[10] Paz and Eliot Weinberg wrote a book presenting "nineteen ways" of translating the poem "Deer Park" from this language. A popular anthology of 300 poems in this language includes "Song of the Wagons."
ANSWER: Classical **Chinese** [or Middle **Chinese**; or Literary **Chinese**; or **Zhōngwén**; accept specific modern vernaculars like **Mandarin** Chinese or **Cantonese**] ("Deer Park" is by Wáng Wéi, and "Song of the Wagons" is by Dù Fǔ.)
<AP, World/Other Literature>

8. Examples of these pieces by John Williams include one "for X-Wings" and one "for Motorcycle and Orchestra," the latter of which was used in the film *Indiana Jones and the Last Crusade*. For 10 points each:
[10] Name this type of musical composition that is usually in 3/4 time. Beginning with Beethoven, one of these light, joking pieces often replaced the minuet in the trio-form third movement of a symphony.
ANSWER: **scherzo** ("SKAIRT-soh")
[10] This Czech composer's *Fantastic Scherzo* is much lighter than the *Asrael Symphony* he wrote after the death of his father-in-law, Antonín Dvořák. He wrote a Serenade for Strings in E-flat major and the suite *Pohádka* based on a fairy tale by Julius Zeyer ("YOOL-yoos ZAY-er").
ANSWER: Josef **Suk** ("YO-zef SOOK")
[10] This composer's much-revised Fourth Symphony, the "Romantic," contains a "Hunt Scherzo" in 2/4 time. The second movement of his Seventh Symphony uses four Wagner tubas, and a trumpet leaps up an octave in its scherzo.
ANSWER: Anton **Bruckner**
<AE, Classical Music>

9. In 1919, Italian poet Gabriele D'Annunzio ("dah-NOONT-syoh") led an invasion of this city and appointed himself as this city's Duce ("DOO-chay"). For 10 points each:
[10] Name this port city where D'Annunzio's reign came to an end on "Bloody Christmas" in 1920, which saw the Italian military drive out D'Annunzio and his "Regency of the Camaro."
ANSWER: **Fiume** ("FYOO-may") [or **Rijeka** ("ree-YAY-kuh")]
[10] Fiume was a contested territory between Italy and this neighboring country. This country's Communist leader, Marshal Tito, rose to power as a leader of the Partisans fighting an Axis invasion of this country.
ANSWER: **Yugoslavia** [or **Jugoslavija**]
[10] Fiume was a target of this Italian movement that sought to retake "unredeemed" lands from foreign rule. This movement gave its name to the policy of claiming nearby territories on the basis of shared ethnicity or history.
ANSWER: **irredentism** [or **irredentist** or *irredentista*]
<AP, European History>

10. A character in this play writes charming memoirs for minor royals, though Princess Palliatani dies before her memoir is finished. For 10 points each:
[10] Name this Noël Coward play that features the psychic Madame Arcati, who uses séances ("SAY-on-sizz") to bring back the ghosts of Ruth and Elvira in Charles Condomine's house.
ANSWER: ***Blithe Spirit***
[10] In *Blithe Spirit*, Madame Arcati references this other play when she claims "There are more things in heaven and earth, Mrs. Condomine, than are dreamt of in your philosophy." This play's title character gives the "To be or not to be" speech.
ANSWER: ***Hamlet*** [or *The Tragedy of **Hamlet**: Prince of Denmark*]
[10] To maintain her strength after séances, Madame Arcati frequently munches on these specific food items that Ruth made. In *The Importance of Being Earnest*, Lane cannot buy ingredients for making this food, despite Aunt Augusta specifically asking for some.
ANSWER: **cucumber sandwich**es [prompt on partial answers]
<VS, British Literature>

11. Planck's ("plonk's") formulation of this result states that all equilibrium systems have the same entropy at absolute zero. For 10 points each:
[10] Name this result that implies no finite cooling process can reach a temperature of zero kelvins.
ANSWER: **third law** of thermodynamics

[10] This scientist provided the first statement of the third law, that chemical reactions take place without changes in entropy near absolute zero. This scientist also developed an equation from chemical thermodynamics that is modified to account for overpotential in the Butler–Volmer equation.
ANSWER: Walther **Nernst** [accept **Nernst** equation]
[10] Linus Pauling theorized that this material could exhibit residual entropy at absolute zero. Exotic high-pressure crystalline phases of this material are labeled by the Roman numerals IV ("four") and XII ("twelve").
ANSWER: water **ice** [prompt on water]
<GR, Chemistry>

12. An artist from this country showed a goddess reclining at night surrounded by classical architecture in his *Sleeping Venus*. For 10 points each:
[10] Name this home country of Paul Delvaux ("del-VO"), as well as an artist best-known for a massive painting of Jesus entering one of its cities under the banner "Vive La Sociale."
ANSWER: **Belgium**
[10] Paul Delvaux's fear of one of these objects in a school music room inspired his repeated depictions of them, such as a painting in which one "has the shell." His compatriot James Ensor painted two of these objects pulling on a herring.
ANSWER: **skeleton**s [or **skull**s]
[10] This other Belgian painter painted a skull with purple and blue flowers in its eyes wearing a bowler hat. This surrealist painter of *The Treachery of Images* also painted a green apple in front of a man's face in *Son of Man*.
ANSWER: René **Magritte**
<JH, Painting & Sculpture>

13. This leader, who wrote his country's national anthem "One Single Night," played guitar in the band "Tout-à-Coup ("toot-ah-KOO") Jazz" with his military associates. For 10 points each:
[10] Name this leader who renamed Upper Volta as Burkina Faso. This leader, sometimes called "Africa's Che Guevara," planted nearly 10 million trees to mitigate the desertification of the Sahel.
ANSWER: Thomas **Sankara**
[10] Thomas Sankara fought the Christmas War against this neighboring country over the Agacher Strip. This country, whose capital is Bamako, shares its name with an empire that was ruled by several *mansa*s.
ANSWER: **Mali**
[10] The Liberian warlord Prince Johnson claimed that Thomas Sankara's assassination in 1987 was orchestrated by this Liberian leader who supported the RUF in the Sierra Leone Civil War in exchange for diamonds.
ANSWER: Charles **Taylor** [or Charles Ghankay **Taylor**]
<AP, World History>

14. In a widely-cited paper, Daron Acemoğlu ("dah-ROAN ah-jay-MOH-loo") and James Robinson used European settler mortality rates as an instrumental variable for the strength of these entities in formerly colonized countries. For 10 points each:
[10] Name these entities, which have "inclusive" and "extractive" types contrasted in Acemoğlu and Robinson's book *Why Nations Fail*. Douglass North defined these entities as the "rules of the game" in human interactions.
ANSWER: **institution**s
[10] The institutional economist Elinor Ostrom became the first woman to win the Nobel Prize in Economics thanks to her work on this problem proposed by Garrett Hardin, in which people acting rationally deplete a shared resource.
ANSWER: tragedy of the **commons** [accept *Governing the **Commons***]
[10] Ronald Coase ("koce"), who founded New Institutional Economics, proposed a namesake theorem stating that without transaction costs, bargaining can efficiently resolve these costs and benefits incurred by unrelated third parties.
ANSWER: **externalities** [or **externality**; or **spillover** effects]

15. In a story by this author, a Polish-born librarian with a photographic memory is sent to an internment camp for writing a letter to the editor of a French magazine. For 10 points each:
[10] Name this author whose only novel was *Beware of Pity*. In this author's novella *Amok*, a doctor commits suicide by jumping off the deck of an Indonesian ship while clutching the coffin of a woman who asked him for an abortion.
ANSWER: Stefan **Zweig**
[10] In another Zweig story, Dr. B plays this game against himself in isolation so many times that he develops two distinct personalities called "Black" and "White" and hears an inner voice that screams "Check!" and "Mate!"
ANSWER: **chess** [or *Schach*; accept "**A Chess Story**"; prompt on *The Royal Game*]
[10] Zweig's novella *Confusion* details Roland's idolatry of an unnamed person with this profession. In *All Quiet on the Western Front*, Mittelstadt mocks the uniform of a person with this profession named Kantorek who refers to the protagonist and his friends as the "Iron Youth."
ANSWER: **professor** [or **teacher**; or school**master**]
<AP, European Literature>

16. In his dictionary, the *Lisan al-Arab*, Ibn Manzur noted that the characteristic of the Muslim community lies in the fact that for them, this concept is their blood. For 10 points each:
[10] Name this concept that is referred to by the Arabic word *qurban*. *Udhiyah* is a ritually prescribed form of this concept that takes place on a certain holiday.
ANSWER: **sacrifice** [or **offering**; or **oblation**; accept animal **sacrifice**]
[10] This holiday features animal sacrifices done to commemorate Abraham's willingness to sacrifice his son Ishmael. This holiday takes place at the same time as the end of the annual *hajj* in Mecca.
ANSWER: **Eid al-Adha** ("eed al-ODD-hah") [or **Eid al-Kabir**; prompt on Eid; prompt on the Festival of Sacrifice]
[10] The slaughter of sacrificed animals on Eid al-Adha should be done according to the method of *zabiha* to ensure that the meat has this property, the opposite of which is *haram*.
ANSWER: **halal** [prompt on allowed, permissible, lawful, and other synonyms]
<WC, Religion>

17. This effect results in the Gaussian profile of spectral lines due to thermal motion of atoms. For 10 points each:
[10] Name this effect that redshifts or blueshifts light, depending on the source velocity relative to the observer.
ANSWER: **Doppler** effect [accept **Doppler** broadening]
[10] Spectroscopy is normally limited by Doppler broadening due to thermal motion of atoms in the sample. This "Doppler-free" technique overcomes the limitation by using pump and probe beams and measuring stimulated emission.
ANSWER: **saturated absorption** spectroscopy
[10] Saturated absorption spectroscopy can be used to measure these small features in the spectra of hydrogen-like atoms. The 21-centimeter line in hydrogen is an example of this feature that arises due to the interaction of nuclear and electron spin.
ANSWER: **hyperfine** structure [prompt on spin–spin interaction; do not accept or prompt on "fine structure"]
<GR, Physics>

18. After Buenaventura Báez requested the annexation of his country, this president sent Orville Babcock to meet with Báez. For 10 points each:
[10] Name this US president whose failure to annex Santo Domingo became a major political embarrassment. This president's time in office also saw the Whiskey Ring and Crédit Mobilier scandals.
ANSWER: Ulysses S. **Grant** [or Hiram Ulysses **Grant**]

[10] The actual treaty to annex Santo Domingo was drafted up by this Secretary of State, who also settled the *Alabama* Claims with the UK and the *Virginius* Affair with Spain.
ANSWER: Hamilton **Fish**
[10] The annexation treaty was vigorously opposed by this senator, who had earlier pushed for the establishment of the Freedmen's Bureau during Reconstruction as chair of the Select Committee on Slavery and Freedom.
ANSWER: Charles **Sumner**
<AE, American History>

19. In 2017, Rome mayor Virginia Raggi prevented three triangular towers designed by this architect from being included in the park next to football club AS ("ah-ess") Roma's planned new stadium. For 10 points each:
[10] Name this Polish-American architect whose Jewish Museum in Berlin has several empty "voids" lacking air conditioning, one of which contains thousands of iron cutouts resembling human faces.
ANSWER: Daniel **Libeskind**
[10] David Childs of Skidmore, Owings, and Merrill discarded much of Libeskind's preliminary design for this New York skyscraper built as a spiritual replacement to the Twin Towers destroyed on 9/11.
ANSWER: **One World Trade Center** [or **One WTC**; or **Freedom Tower**; prompt on World Trade Center or WTC]
[10] Libeskind's "Crystal" was a controversial addition to a museum in this country. Moshe Safdie ("mo-SHEH SAHF-dee") built a modular "Habitat" for a World's Fair in this country, the home country of the architect of the Dancing House.
ANSWER: **Canada** (The architect of the Dancing House is Frank Gehry, and Habitat 67 was for Montreal's Expo.)
<AP, Other Arts>

20. C. L. Stevenson defended a variant of this view that attempts to explain how moral language is "magnetic." For 10 points each:
[10] A. J. Ayer proposed what view in metaethics that holds that moral language expresses non-propositional attitudes like "boo" and "hurrah?"
ANSWER: **emotivism** [prompt on expressivism; prompt on non-cognitivism]
[10] A primary motivation for emotivism was this thinker's open question argument, which shows that no moral property can be identical with a natural property, disproving what he dubbed the "naturalistic fallacy."
ANSWER: G. E. **Moore** [or George Edward **Moore**]
[10] Simon Blackburn interprets this Scottish skepticist as an early expressivist. He argued that an "is" cannot be derived from an "ought" in his book *A Treatise of Human Nature*.
ANSWER: David **Hume**
<CK, Philosophy>