Round 8 – Tossups

1. **Agnes Pockels coined her namesake "Pockels point" while studying these compounds. Short spacer groups are used in the "bolaform" or "Gemini" examples of these compounds. These compounds are studied with a sliding trough that contains a Wilhelmy plate, and was improved upon by Katharine Blodgett. Excess terms symbolized capital-gamma appear in an iso·therm named for (*)** Gibbs that is used to study these compounds. These compounds have a dramatic increase in solubility above the Krafft temperature. These compounds generally feature both a long non-polar carbon chain and a polar head group, such as in sodium dodecyl ("DOH-duh-sill") sulfate, which can aggregate into micelles ("my-SELLS"). For 10 points, name these compounds that decrease the surface tension at an interface.
ANSWER: **surfactant**s [accept **detergent**s; prompt on "**soap**s" or "**emulsifier**s" or "**amphiphilic** molecules" or "**amphipathic** molecules"]

2. **An artist from this movement created a series of food-themed self-portraits, including** *Eating a Banana* **and** *Self-Portrait with Fried Eggs*. **Another artist from this movement scrawled a warning in mirrored text about "speak[ing] in…sameness" over a nude self-portrait entitled** *Propped*. **Jay Jopling founded the "White Cube" gallery to host shows by artists from this movement. This movement's (*)** *Sensation* exhibition included an open tent into which the artist had stitched the names of her grandmother and boyfriends, among others. This movement includes the artist of *My Bed* and an artist who displayed a dead shark in formaldehyde. For 10 points, name this movement comprising Tracey Emin, Damien Hirst, and other contemporary provocateurs from the United Kingdom.
ANSWER: **YBA** [or **Young British Artists**]

3. **The protagonist of this novel gets thrown out of a hotel for demanding a refund, when he discovers that the prostitute he was sent is not a natural blonde. A family in this novel makes its fortune by stealing coal from government mines. This novel's protagonist idolizes a swineherd's son, who rises from bus conductor to politician under a corrupt populist nicknamed the Great Socialist. Water Buffalo, Raven, Wild Boar, and Stork are four landlords in this novel who create a metaphorical (*)** "rooster coop" of poverty. Its protagonist describes using a whisky bottle to stab Ashok to death and founding a successful taxi business in Bangalore, in a series of letters to Wen Jiabao. For 10 points, name this rags-to-riches story about Balram Halwai, the debut novel of Aravind Adiga.
ANSWER: The **White Tiger**

4. **An open air garden in this country was home to the first Yiddish-language theater troupe, founded by Avrom Goldfaden. While staying in this country, Naftali Imber began writing the poem "Tikvatenu," which would become "HaTikvah." This country's Communist Party was effectively run by a Jewish woman serving as the world's first female foreign minister, Ana Pauker. This country restricted citizenship to Christians with the 1866 Constitution adopted under its second (*)** Domnitor; that constitution was adopted when Alexander Cuza was overthrown by this country's future King Carol I. The Legionnaires Rebellion led to the crushing of the Iron Guard in this country, whose forces committed a pogrom in Iasi ("YAH-see"). For 10 points, name this country led during World War II by Ion Antonescu.
ANSWER: **Romania**

5. **This deity's priests, who were ranked from Chief Prophet through Fourth Prophet, included Psusennes II ("p'soo-SEN-nees the second"). Plutarch writes that a priest of this deity mispronounced the Greek for "my son" while addressing a king who was led to this deity's sanctuary by crows, though Arrian says the same king was led by snakes. 50,000 soldiers were lost in the desert after being sent to attack this god's sanctuary by Cambyses II ("kam-BYE-zees the second"). This dedicatee of the largest temple at (*)** Karnak became the tutelary god of Thebes ("theebs") during the early Middle Kingdom. Alexander was told he was divine by this god's oracle at Siwa. During the New Kingdom, this ram-headed father of Khonsu was syncretized with the enemy of Apep. For 10 points, name this Egyptian god syncretized with the sun god Ra.
ANSWER: **Amun** [or **Ammon** or **Jamanu**; accept **Amun**-Ra or Zeus-**Ammon** or Jupiter-**Ammon**; accept **ammonium** or **ammonion**; prompt on Ra or Zeus; reject "ammonia"] (Ammonium is, amazingly enough, named after the fact that it was a salt exported from near Ammon's sanctuary at Siwa.)

6. **Inspired by his own study on varieties of this concept, Meyer Friedman thrice read *In Search of Lost Time* in old age. Four types of data about this concept are denoted B, L, I, and S-data. A discredited study about this concept claimed to have found a type that raises cancer risk 121-fold, and was conducted by Hans Eysenck ("EYE-zenk"). The 16PF questionnaire measures this concept and was developed by Raymond (*)** Cattell. "Inventories" of this concept include a 434-question one designed to measure people along "folk" scales, and one developed at the University of Minnesota used for therapeutic assessment. Factor analysis was used to determine essential components of this concept known as the "Big Five." For 10 points, the acronym OCEAN denotes five traits of what concept?
ANSWER: **personality** [accept **personality type**s]

7. **If the ratio of potential energy to this quantity is bounded below by a constant independent of this quantity, then the potential is considered H-stable. The BBGKY hierarchy equations are used for systems where this property is large, due to the equations coupling two values of this quantity. If the product of "one over the cube of thermal wavelength" with the ratio "volume over this quantity" is greater than 1, then the Sackur–Tetrode equation is valid. This quantity, (*)** volume, and temperature are held constant in the canonical ensemble. The derivative of Gibbs free energy with respect to this quantity is the chemical potential, which is this quantity's conjugate variable. Statistical mechanics applies to systems where this quantity is very large. For 10 points, name this quantity that, for a single mole, is equal to Avogadro's constant.
ANSWER: particle **number** [or **number** of particles or **number** of molecules; prompt on "N"]

8. **This president's authority to fire a member of the FTC was denied in a case argued by the executors of the estate of the man in question, William Humphrey. Frank Gannett was a news media ally who turned against a plan by this president that failed partly due to Joseph Taylor Robinson's death from a heart attack. "Black Monday" and "White Monday" were respectively defeats and victories for this president, who nominated (*)** Robert Jackson to both the Cabinet and the Supreme Court. He signed a law that let meat producers create "straight killing" codes, which were struck down in the "sick chicken" case. A Court shift towards upholding this President's policies was signaled by Owen Roberts's "switch in time that saved nine." For 10 points, what president outlined his court-packing plan in fireside chats?
ANSWER: **F**ranklin Delano **Roosevelt** [or **FDR**; prompt on Roosevelt] (The case from the leadin is called Humphrey's Executor.)

9. **This author reframed Coleridge's idea of Primary Imagination to be about the sacred and the profane in a lecture that claims that poets should apprentice themselves to Masters who become their Censor, until they learn to censor themselves. This author delivered that lecture, "Making, Knowing, Judging," when appointed Professor of Poetry at Oxford in 1956, and included it in *The* (*)** *Dyer's Hand and Other Essays*. An employee of Fudge Motors Inc. who "held the proper opinions for the time of year" appears in a poem by this author, who described a "torturer's horse" that "[s]cratches its innocent behind on a tree" and "how everything turns away / Quite leisurely from the disaster" in Breughel's ("BROY-gull's") *Landscape with the Fall of Icarus*. For 10 points, name this British poet of "Musée des Beaux Arts" ("moo-ZAY day boh-ZAR").
ANSWER: W(ystan) H(ugh) **Auden** (The poem whose title is not dropped is "The Unknown Citizen")

10. **This film's art director specially built an indecipherable white neon sign that vaguely resembled the letters "F-O-A." A sexual encounter between the two main characters of this film is interrupted by the delivery of a propeller from an antique store. The protagonist of this film romps around on a purple strip of paper with two nude women played by Gillian Hills and Jane Birkin. Herbie (*)** Hancock provided the score for this film, whose protagonist runs off with the neck of a broken guitar after a concert by the Yardbirds. At the end of this film, the protagonist watches two mimes act out a game of tennis in the park where he met a *femme fatale* played by Vanessa Redgrave. For 10 points, a photographer stumbles across a murder in what Cortazar-inspired film directed by Michelangelo Antonioni?
ANSWER: *Blowup*

11. **In the aftermath of this conflict, Menelaus was executed and replaced in one position by Alcimus. After a regent named Lysias ("LISS-eeh-uss") used war elephants trying to end this conflict, Roman diplomats accused him of violating the Treaty of Apamea ("puh-PAH-mee-uh"). A trend supported by Jason the Oniad was targeted during this conflict, during which Simon Thassi besieged the Acra fortress. This conflict was led by a man whose grandson, John (*)** Hyrcanus, would rule a dynasty whose name means "hammer." This uprising began when a group based at Modein ("moh-DEEN") rejected the Hellenization policies of Antiochus IV Epiphanes ("ann-TEE-uh-kuss the fourth epiphanies"); that group was led by Mattathias and the eponymous Judah. For 10 points, name this 160s BC revolt in which the nascent Hasmonean Dynasty came to power in Seleucid ("suh-LEW-sid") Judea in a victory celebrated on Hanukkah.
ANSWER: **Maccabean** ("muh-KAYB-ian") revolt [or revolt of the **Maccabees**; accept the **Hasmonean** revolt until mentioned]

12. **Analysis of these entities is simplified by drawing polygons with arrows, finding open patterns, and transforming to equations in the King–Altman method. One model of these entities is modified using the coefficients alpha and alpha-prime, which both equal one plus the quantity "I over K." When acting on multiple targets, these entities act via a ternary complex or a ping-pong mechanism. These entities are assumed to rapidly form a steady state with their target in a model which rearranges into a (*)** double-reciprocal Lineweaver–Burk plot. The Michaelis–Menten equation describes these molecules, which can be regulated uncompetitively, noncompetitively, or competitively; in the last case, the inhibitor binds the active site instead of substrate. For 10 points, name these proteins that act as catalysts.
ANSWER: **enzyme**s [or **enzyme**-catalyzed reactions or **enzymatic** reactions; accept enzyme **inhibitor** or **inhibition** before before "inhibitor", due to the alpha and alpha-prime clue describing enzyme inhibition; prompt on reactions or chemical reactions with "chemical reactions including what?"]

13. **A set of three piano pieces partly titled for this adjective begins with a jota titled *Exaltación*. Maurice Maeterlinck's ("Mater·Link") essay "The Life of Bees" inspired an early Stravinsky work partly titled for this adjective, his Opus 3. This adjective is applied to three dances for solo piano by Joaquin Turina and to an orchestral work that uses four timpani to depict distant thunder in a slow movement that features a conversation between an English horn and offstage oboe, representing (*)** shepherds. The fifth and final movement of that piece titled for this adjective quotes the "Dies irae"("DEE-ess EE-ray") in its depiction of a witches' sabbath, and includes an idée fixe ("ee-DAY FEEX") representing actress Harriet Smithson. For 10 points, "The March to the Scaffold" appears in a symphony titled for what adjective, by Hector Berlioz?
ANSWER: **fantastic** [or *fantastique*; or *fantásticas*; accept *Danzas fantásticas*; accept *Scherzo fantastique*; accept *Symphonie fantastique*; accept *Fantastic* Symphony]

14. **This property fluctuates continuously for a girl named Erisa in a thought experiment by Ned Block. In response to a thought experiment about this property, a non-propositional form of "acquaintance knowledge" was coined by Earl Conee. This property is the original example used in the "knowledge argument" against physicalism. Neologistic predicates for two of these properties, which (*)** switch places before and after time-point *t*, are coined in Nelson Goodman's "New Riddle of Induction." Frank Jackson invented a scientist named Mary who experiences this property for the first time. John Locke formulated a scenario in which two people use the same words for examples of these qualia ("KWAH-lee-uh"), but undergo opposite experiences. For 10 points, name these visual properties, which are swapped in an "inverted spectrum."
ANSWER: **color**s [or **color** vision; prompt on vision; prompt on visual perceptions; prompt on qualia; prompt on quale]

15. **In a play, a man who worked in one of these places says as he dies that the hand that grips his heart is made of metal, not ice. In that play, a disgraced former head of one of these places never leaves the upper level of his house, where he is visited only by former employee Vilhelm Foldal. A man who works in one of these places calls himself "a shipwrecked man clinging to a spar" until a former flame convinces him to stop blackmailing a woman who (*)** forged her father's signature to pay for her husband's recuperation trip. *John Gabriel Borkman* ran one of these places, as does a man who is distracted from checking his letterbox by his wife's tarantella. For 10 points, in *A Doll's House*, Krogstad and Nora's husband Thorvald work in what sort of place, from which Nora secured an illegal loan?
ANSWER: **bank**s

16. *Description acceptable.* **H.E. Dudeney offered solutions to this problem called "St. George and the Dragon" and "The Four Kangaroos." Part of the 9th century poem *Kavyalankara* ("KAHV-yuh-LAHN-kuh-ruh") can be read as a solution to this problem by Rudrata ("ROOD-ruh-tuh"). When solving this problem, each step should always go to the vertex with the least degree, per Warnsdorff's rule. The first known solution to this problem, provided by al-Adli ar-Rumi, is re-entrant, while the first magic square solution, provided by William Beverley, was publicized by Howard (*)** Staunton. The fraudulent Mechanical Turk showed off solutions to this problem, which is a special case of the cyclic Hamiltonian path problem that is restricted to 64 vertices, since the board is 8-by-8. For 10 points, name this problem in which a piece moves in an L-shape to each square of a chess board exactly once.
ANSWER: **knight's tour** problem [accept answers that include the phrase **knight's tour**; accept answers which refer to a **knight** moving to **every square** on a chessboard once; prompt on answers referring to knights; prompt on (cyclic) Hamiltonian path problem before "Hamiltonian path"]

17. **A bell in these places rings five times a day to mark periods called *gah*. Two offerings made in these places differ by whether milk is added before grinding twigs. A rectangular sanctuary in these buildings is cordoned off by a groove in the floor called a *pavi*, and contains an urn called an *afrinagan*. There are three grades of these buildings, the highest of which contains Atash Behram ("ah-tahsh BEH-rahm"). A (*)** Dastur ("duh-STOOR") is a high priest who performs ceremonies in these places, where offerings of *haoma* ("HOH-muh") are made during the Ab-Zohr. The *Yasna* ("YUS-nuh") ceremony occurs in these buildings, during which text from the Avesta is recited to support the creation of Ahura Mazda ("uh-HOO-ruh MAZZ-duh") against the forces of Ahriman ("AH-ree-mun"). For 10 points, name these houses of worship attended by members of a religion founded by an ancient Persian prophet.
ANSWER: **fire temple**s [or **Zoroastrian temple**s; accept reasonable equivalents implying a Zoroastrian place of worship; prompt on partial answer; accept **agiary**, **atashkadeh**, **atashgah**, or **dar-e mehr**]

18. **On the 100th anniversary of this author's most famous work, Thomas Vinciguerra delivered a lecture likening its critics to Orwellian snobs and Orwellian liars. Thomas Merton adopted a pseudonym based on this author to write a poem poking fun at Trappist monasteries raising money by selling cheese. This poet is the namesake of an annual poetry contest hosted by the Philolexian ("fye-loh-LEX-yun") Society at Columbia University. A poem by this author describes a figure whose "hungry (*)** mouth is prest" to the "earth's sweet flowing breast." This man is parodied in Ogden Nash's "Song of the Open Road," which is about billboards and which mocks a poem that includes the line, "Poems are made by fools like me." For 10 points, name this poet who declared, "I think that I shall never see / A poem as lovely as a tree."
ANSWER: Joyce **Kilmer** [or Alfred Joyce **Kilmer**]

19. **This property is implied when the Melnikov function has a simple zero. This phenomenon is controlled in a method developed by Ott, Grebogi, and Yorke in which small perturbations are applied after taking a Poincaré ("pwan-kah-RAY") section. A "hyper-" version of this phenomenon was demonstrated in a four-dimensional flow by Otto Rössler. For some positive number *d*, two close orbits in systems with this property will drift more than *d* units apart, implying a positive (*)** Lyapunov ("lip-uh-NOFF") exponent. This behavior was characterized in a model of atmospheric convection by Edward Lorenz, who noted that solutions with this property formed a butterfly-shaped attractor. For 10 points, name this phenomenon exhibited by the double pendulum, in which a deterministic system is strongly sensitive to initial conditions.
ANSWER: deterministic **chaos** [accept word forms like **chaotic** behavior]

20. **These people were helped by mutual aid groups called returning virtue associations, inspired by the Hōtoku movement of Ninomiya Sontoku's thought. These people are the second-highest ranking group referred to in the phrase *shi-nō-kō-shō*, denoting four categories of people in Confucian thought. These people revolted in Higo, which partially inspired a policy of gathering metal to supposedly build a Buddha statue at the Asuka-dera monastery. They're not monks, but that campaign to confiscate these people's weapons was** (*) Toyotomi Hideyoshi's Great Sword Hunt. Monks and these people opposed *daimyo* rule by forming Ikko-Ikki leagues, and their productivity increased after winnowing technology was imported from China. For 10 points, name these people who raised millet and rice in shogun-era Japan.

ANSWER: **peasant**s [or **heimin**; or **noka**; or **nojin**; or **hyakusho**; or **farmer**s; or **smallholder**s; or **agricultural laborer**s; prompt on <u>commoners</u>; prompt on non-occupational descriptions such as <u>people who live in rural areas</u>]

Round 8 – Bonuses

1. NOTE TO MODERATOR: Do not reveal any of the alternate answers to the first part.
This poem describes the poet's beloved as a "toy doll," a shell "in whom the earth sings," and someone with "arms of transparent stone." For 10 points each:
[10h] Name this poem that ends with the speaker noting that he has seen "ears of wheat toiling in the mouth of the wind." It appears in a collection that also includes "Tonight I can write the saddest lines."
ANSWER: "**Ah Vastness of Pines**" [or "*Ah Vastedad de Pino*"; accept **third love song** from *Twenty Love Poems and a Song of Despair*]
[10m] "Ah Vastness of Pines" is part of this collection. Its final poem includes the refrains "This is the hour of departure" and "in you everything sank."
ANSWER: *Twenty Love Poems and a Song of Despair* [or *Veinte poemas de amor y una canción desesperada*]
[10e] This Chilean poet of the *Canto General* wrote *Twenty Love Poems and a Song of Despair*.
ANSWER: Pablo **Neruda** [or Ricardo Eliécer Neftalí Reyes **Basoalto**]

2. An example of this behavior is a group of geese following Konrad Lorenz after hatching. For 10 points each:
[10e] Name this type of behavior that is learned during a critical period.
ANSWER: **imprinting**
[10m] In this effect, which is sometimes called reverse sexual imprinting, children who are raised together, even if they are not related, do not become attracted to each other later in life.
ANSWER: **Westermarck** effect
[10h] The critical period hypothesis of language acquisition was advanced by this cognitive neuroscientist in his *The Biological Basis of Language*.
ANSWER: Eric Heinz **Lenneberg**

3. Emma Newkirk and Hugh Jenkins won the first contest that Bernarr Macfadden hosted to promote this activity, pictures of which drew the ire of Anthony Comstock. For 10 points each:
[10h] Name this activity. Eugen Sandow ("OY-gun ZAHN-doh"), a man renowned for this activity, toured the U.S. posing as legendary figures while wearing just a fig leaf.
ANSWER: **bodybuild**ing [accept **Physical Culture**; prompt on exercise or calisthenics or weight-lifting]
[10e] Sandow was filmed by this man, who also filmed the strongwoman Charmion's trapeze striptease. At his Black Maria studio, this "Wizard of Menlo Park" filmed his assistant Fred Ott sneezing.
ANSWER: Thomas (Alva) **Edison**
[10m] Sandow was appointed this monarch's personal trainer. This king changed the name of his royal house from Saxe-Coburg to Windsor.
ANSWER: **George V** ("the fifth") [prompt on George]

4. You want to notate and edit music on a computer. Answer the following about the software you might use, for 10 points each.
[10e] You begin by using scorewriter software named for this Finnish composer whose *Kalevala*-inspired works include "The Swan of Tuonela."
ANSWER: Jean **Sibelius** [or Johan Julius Christian **Sibelius**]
[10h] After you've outputted your Sibelius scores as MIDI files, you decide to edit them using this digital audio workstation made by Sibelius's parent company, Avid.
ANSWER: **Pro Tools**
[10m] Your friend prefers to notate in JavaScript and therefore uses the Verovio engraving library, which outputs scores in a font named for this city, whose musical institutions include the Gewandhaus ("geh-VAND-house") Orchestra and the *Thomaskirche* ("TOH-mahss-keerk-huh")
ANSWER: **Leipzig**

5. The *hamsa* is a symbol consisting of one of these objects with an eye or inscription in the center, and is used to ward off the evil eye. For 10 points each:
[10m] Name these objects. In another symbol, a wheel called the dharmachakra appears inside one of these things symbolizing ahimsa ("uh-HIM-sah").
ANSWER: **hand**s
[10e] Ahimsa is a vow of nonviolence taken by members of this South Asian religion, which venerates a group of 24 *tīrthaṅkara*s ("teer-TUNG-kuh-ruhs").
ANSWER: **Jaini**sm
[10h] Ahimsa is the first of the five vows in Jainism. This other vow translates as "non-possession" and is intended to minimize material desire.
ANSWER: *aparigraha* ("uh-puh-ree-GRUH-huh")

6. This person introduced himself in a letter to Manuel Komnenos, claiming to rule the Nestorian Kingdom of the Three Indies, but when Pope Alexander III ("the third") tried to reply he got no answer. For 10 points each:
[10m] Name this mythical Christian king. Otto of Freising ("FRY-zing") documented Hugh of Jabala's ("JAB-uh-luh's") account of this ruler, whom Portuguese explorers believed ruled a kingdom in East Africa.
ANSWER: **Prester John** [or **John the Priest**; or **Presbyter Johannes**; prompt on partial answer]
[10h] Hugh of Jabala's source for Prester John is linked to this ruler's victory over the Seljuk ("SEL-juke") Turks at Qatwan. He founded Qara Khitai ("kah-rah kih-TYE"), or the Western Liao ("l'yow"), after fleeing Jin Dynasty expansion.
ANSWER: **Yelü Dashi** [or **Zhongde**; or **Dezhong**]
[10e] The sack of a state established after this conflict, Edessa, led to a meeting at which Pope Eugenius III ("the third") learned of Prester John from Hugh of Jabala ("the second"). Pope Urban II called for this conflict.
ANSWER: **First Crusade**

7. In the late 19th century, scholars reattributed several paintings thought to be by Frans Hals after discovering they contained a distinctive signature incorporating a five-pointed star. For 10 points each:

[10e] Those paintings were actually created by a Dutch artist with what first name, surnamed Leyster? Artemisia Gentileschi ("gent-ill-ESS-key") painted a Biblical heroine with this first name beheading Holofernes.

ANSWER: **Judith** [or **Judith** Leyster]

[10h] A later painter drew inspiration from Chinese ideographs to create this artistic monogram. A variant of this symbol with a stinger added was used to sign many of the letters collected in *The Gentle Art of Making Enemies*.

ANSWER: James McNeill Whistler's **butterfly** [prompt on Whistler's signature]

[10m] This Northern Renaissance artist signed many of his paintings with a winged serpent, a symbol from his coat of arms. This artist executed many portraits of his friend Martin Luther.

ANSWER: Lucas **Cranach** the Elder

8. "Menu costs" are one reason for this phenomenon, since firms must spend resources to decide what to charge customers. For 10 points each:

[10m] What phenomenon, also called "nominal rigidity," occurs when prices adjust slowly to underlying market conditions?

ANSWER: **stickiness** [accept **sticky** prices; accept **stick**ing]

[10e] Sticky prices may result when this other quantity is "sticky," so agents don't update their decisions. George Akerlof's paper "The Market for Lemons" describes how asymmetry in this quantity can lead to adverse selection.

ANSWER: **information** [accept **information asymmetry**]

[10h] Neo-Keynesian ("KAYNZ-ian") examples of these models often use staggered contracts to model sticky prices. The New York Fed regularly publishes economic forecasts based on one of these models, which heavily rely on the Euler ("OY-ler") equation.

ANSWER: **DSGE** models [or **DGE** models; or **dynamic stochastic general equilibrium** models; prompt on general equilibrium models or real business cycle models or RBC models]

9. Answer the following about homologation reactions, which generally add a -CH_2 ["C-H-2"] unit to hydrocarbon chains. For 10 points each:

[10h] The Arndt-Eistert homologation adds a methylene ("METH-uh-leen") unit using this small explosive yellow compound and carbene source, which is often replaced with a tri·methyl·silyl derivative for safety.

ANSWER: **di·azo·methane** [or **CH_2N_2**]

[10e] The Arndt–Eistert reaction is used to homologate molecules with this functional group, beginning with its conversion to an acid chloride using $SOCl_2$. This functional group with formula -COOH is found in vinegar.

ANSWER: **carboxylic acid** [or **carboxyl**; generously prompt on "carboxylate"]

[10m] The Kiliani ascension elongates the carbon chain of an aldose through a cyano·hydrin intermediate. It is more commonly co-named with this Nobel winner, who created a method for visualizing open-chain sugars.

ANSWER: (Hermann) Emil (Louis) **Fischer** [reject "Franz Emil Fischer"]

10. When this man is confined to a sick bay with dysentery ("DISS-en-tair-ee"), the other sick men beat him and steal his rations, to punish him for being too weak to relieve himself. For 10 points each:
[10h] Name or describe this man whose final words are a cry for water before an officer smashes his face with a club. Earlier, when this man thinks he is fated to die, he tries to convince the narrator to sell a knife and spoon.
ANSWER: **Shlomo** Wiesel [or **Elie Wiesel's father**; or **S**hlomo **Wiesel**; prompt on Wiesel]
[10e] Elie Wiesel's *Night* describes his time in this infamous Nazi extermination camp in Poland, located at Birkenau.
ANSWER: **Auschwitz** [or **Auschwitz**-Birkenau; or **Auschwitz**-Monowitz]
[10m] This author described his time in Auschwitz in the non-fiction work *If This Be a Man*. His training as a chemist is reflected in his short story collection *The Periodic Table*, in which each story is named for an element.
ANSWER: Primo **Levi** [or Primo Michele **Levi**]

11. In these two countries, Assimi Goïta ("ah-SEE-mee goh-EE-tah") and Ibrahim Traoré ("trao-RAY") led coups which were partially motivated by government ineffectiveness at fighting jihadis. For 10 points each:
[10h] Name these two countries. In February 2022 one of their prime ministers, Apollinaire Kyélem de Tambèla, proposed a union which, if enacted, would put the Agacher ("ah-guh-SHAIR") Strip inside one country.
ANSWER: **Burkina Faso** AND **Mali**
[10m] If created, this proposed African country would have its capital at Arusha and contain over 300 million people. The "community" of countries that would be in this country is led by Uhuru Kenyatta.
ANSWER: **East Africa**n **Federation** [or **EAF**]
[10e] This leader's dream of a "United States of Africa" inspired him to found the African Union in 2002. Saif al-Islam, the son of this deceased Libyan dictator, ran for president in 2021.
ANSWER: Muammar **Gaddafi** [accept last name variants such as **Kaddafi** or **Qaddafi**]

12. On his journey to become the first Englishman in this city, Thomas Manning pretended to be a Bengali pilgrim; he then spent his early time in this city concerned with finding a proper hat. For 10 points each:
[10h] Name this city. The British Army occupied the Chumbi Valley after negotiating a convention named for this city following the Young·husband Expedition.
ANSWER: **Lhasa**, Tibet
[10m] Manning joined William Amherst's disastrous embassy to China, after which they stopped by this island and met an exiled man at Longwood House. That man played tons of two-deck solitaire on this island before dying of stomach cancer.
ANSWER: **Saint Helena**
[10e] Despite mostly complaining about Tibet, Manning was awestruck when meeting the 9th holder of this religious office.
ANSWER: **Dalai Lama**

13. Levels of beryllium-10 in these things have been used as a measure of solar activity. For 10 points each:
[10m] Name these objects used to measure the concentration of various gases in the atmosphere over time. They are usually collected using an auger.
ANSWER: **ice core**s
[10h] The ratio of oxygen-18 to oxygen-16 from ice cores in Greenland were used to infer the existence of these events. These events are 25 rapid warmings that occurred during the last glacial period.
ANSWER: **Dansgaard–Oeschger** event [or **D-O** event]
[10e] Ice cores are a useful way of measuring the change in atmospheric concentrations of this gas, whose concentration is plotted on the Keeling curve. This gas is released from burning fossil fuels.
ANSWER: **CO2** [or **carbon dioxide**]

14. Characters in this story discuss the author Jack London, who lived across the valley from Frank Martin's rehab center, where the story is set. For 10 points each:
[10m] Name this story by Raymond Carver in which J.P. tells the unnamed narrator about how alcoholism destroyed his marriage to the chimney sweeper Roxy.
ANSWER: "**Where I'm Calling From**"
[10e] Carver wrote about two couples who drink gin and discuss past relationships in a story titled "What We Talk About When We Talk About" this concept.
ANSWER: **love** [accept "What We Talk About When We Talk About **Love**"]
[10h] In this Carver story, Donna refuses to accept two hundred dollars to perform a sexual act on a man who has recently returned from the Vietnam War with a shriveled ear as a war trophy. This story is narrated by a hospital janitor, whose wife Patti becomes obsessed with selling the title products.
ANSWER: "**Vitamins**"

15. In 1969, this singer's music was pulled from radios for six months because she refused to perform a private concert for Algerian president Houari Boumédiène ("ooh-ah-REE boo-maid-YEN"). For 10 points each:
[10h] Name this Arab singer who collaborated for decades with the Rahbani brothers and her son Ziad ("ZEE-add"). She is so popular in her native country that she's been nicknamed the "soul of Lebanon."
ANSWER: **Fairuz** ("fye-ROOZ") [or Nouhad Wadieʿ **Haddad**]
[10m] The Rahbani brothers made frequent use of the *buzuq*, a type of this instrument. The Greek *bouzoúki* ("boo-ZOO-kee"), a relative to the *buzuq*, is also one of these instruments.
ANSWER: **lute** [prompt on string or stringed instruments; prompt on chordophones; reject "guitar"]
[10e] In songs by the Rahbani brothers, the melody is played by a small flute, a *buzuq*, and one of these free-reed instruments. Like the related concertina and *bandoneón*, this instrument is squeezed to produce sound through its bellows.
ANSWER: **accordion**

16. The square of the operator corresponding to this quantity is the Casimir invariant of the group SO(3) ("S-O-three"). For 10 points each:
[10h] Name this quantity. The square of the operator corresponding to this quantity commutes with its individual components, but those components do not commute with each other.
ANSWER: total **angular momentum** [or orbital **angular momentum**; or spin **angular momentum**; prompt on spin; prompt on momentum, but reject "linear momentum"]
[10m] Given two of the components of angular momentum, their commutator equals "this quantity, times the Levi-Civita ("LEH-vee CHIV-uh-tuh") symbol, times the third component." This is also the value of the commutator of position and momentum.
ANSWER: *i*-times-*h*-**bar** [or equivalents such as *i*-*h*-**bar**; accept *i*-times-*h*-**over-two-pi** or equivalents such as *i*-*h*-**over-two-pi**; accept "imaginary unit" for "*i*"; accept "Planck constant" for "*h*", and accept "reduced Planck constant" for "*h*-bar," but reject "*i*-times-*h*" or equivalents]
[10e] The fact that position and momentum don't commute leads to this principle named for a German physicist. In one formulation, it states that it is impossible to precisely measure the position and momentum of a particle.
ANSWER: **Heisenberg uncertainty** principle [prompt on partial answer]

17. Answer the following about what happens when Continental philosophers analyze film, for 10 points each.
[10m] This essay observes how moviemaking reaches the "height of artifice" by using extensive equipment to portray a reality without equipment. Film is one of several media that this essay attacks for lacking the "aura" of authenticity.
ANSWER: "The **Work of Art in the Age of Mechanical Reproduction**" [or "The **Work of Art in the Age of** (its) **Technical Reproducibility**"; or "*Das **Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit**"*]
[10e] This Slovenian leftist philosopher released two "Pervert's Guide" movies analyzing the ideology behind movies like *Alien*.
ANSWER: Slavoj **Žižek** ("ZHEE-zheck")
[10h] This philosopher divided "movement-images" into four categories named for perception, affection, action, and the mental in the first of two volumes of his work *Cinema*.
ANSWER: Gilles **Deleuze** ("zheel duh-LOOZ")

18. During protests led by mixed-race workers in 1938, this man took over a union headed by Allan Coombs, which became an "Industrial Trade Union" named after him. For 10 points each:
[10h] Name this politician who replaced Norman Manley as his country's premier in 1962, and thus became its first post-independence prime minister.
ANSWER: Alexander **Bustamante** [accept **Bustamante** Industrial Trade Union]
[10m] Bustamante was the first prime minister of this country. Fourteen years earlier, the ship Empire Windrush sailed from this country to Britain.
ANSWER: **Jamaica** [or **Jumieka**]
[10e] As prime minister, Bustamante ordered several police crackdowns on members of this religious movement. Haile Sel·assie is a messianic figure in this religious movement that venerates Jah.
ANSWER: **Rastafari**anism [or **Rasta**s]

19. Answer the following about the *Skáld·skapar·mál* ("SKALD-skah-par-MAHL"), a source of many brief Norse tales, for 10 points each:
[10e] The *Skáld·skapar·mál* is the second part of this work and follows the *Gylfa·ginning* ("GIL-vuh-GIN-ning"). This compilation of myths by Snorri Sturlusson is contrasted with a "poetic" counterpart.
ANSWER: *Prose Edda* [or *Younger Edda*; prompt on *Eddas*]
[10h] The text is framed as a dialogue between these two gods at a feast hosted by Odin. One of them received a magic ale-brewing cauldron from Thor, while the other is married to the apple-keeping goddess Iðunn ("ih-DUN").
ANSWER: **Bragi** AND **Aegir** ("AYG-eer") [accept **Hlér** or **Gymir** for "Aegir"]
[10m] In the dialogue, Bragi explains many of these circum·locutionary phrases, which abound in Norse and Old English poetry. Examples of them include saying "Aegir's daughters" for "waves," and "sea-steeds" for "ships."
ANSWER: **kenning**s

20. This character causes confusion by using the phrase "done her in" when relating her suspicion that her aunt may have been murdered rather than dying of the flu. For 10 points each:
[10h] Name this character who shocks her companions by saying that "If a man has a bit of a conscience, it always takes him when he's sober" in explaining how some women are happy to have their husbands drink.
ANSWER: **Eliza** Doolittle [or Eliza **Doolittle**; prompt on Doolittle]
[10e] Eliza Doolittle meets Mrs. Higgins in the third act of this George Bernard Shaw play.
ANSWER: *Pygmalion*
[10m] In the third act of *Pygmalion*, Henry Higgins takes some time before recalling that he met Freddy Eynsford-Hill in this place. *Pygmalion* begins in this district of London, which contains the Drury Lane theatre.
ANSWER: **Covent Garden** [prompt on the West End of London]