

ACF Regionals 2015: A Livable Community

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Tossups

1. This character is distracted by the sale of a belt buckle and later rejects a marriage offer from a chaplain. One son of this character works as an army paymaster and is captured on his way to hide a cash box, and another child of this character is executed for murdering peasants. In scenes that Margarethe Steffin may have co-written, this character hears Yvette singing "The Fraternization Song" before her mute daughter beats a drum to warn the town of Halle of an approaching enemy. In the first scene of her namesake play, this character foretells the fate of that daughter, Kattrin, as well as the deaths of Eilif and Swiss Cheese. For 10 points, name this matriarch who hauls a bread cart during the Thirty Years War in Bertolt Brecht's play about her *and Her Children*.

ANSWER: **Mother Courage** [or Canteen **Anna** Fierling; or Anna **Fierling**]

2. An underground aqueduct was built for a city in this region by the engineer Eupalinos. An architect from this area invented the grid plan for city layouts, which was later adapted by many Roman cities. This home region of Hippodamus, which was originally settled by Luwians, lost its autonomy after the Peace of Antalcidas. Rulers from this region included Polycrates, and its namesake league gathered regularly for a festival on Mt. Mycale. The fleet of a military coalition here lost the Battle of Lade, which took place during a rebellion led by Aristagoras of Miletus. That rebellion against Darius the Great also involved this region's Aegean islands of Chios, Samos, and Naxos. For 10 points, name this coastal region of Anatolia whose Hellenic cities rose up against Persia in a 499 BC revolt.

ANSWER: **Ionia** [or **Ionian** League; accept **Ionian** Revolt; prompt on "Anatolia" or "Asia Minor"; generously prompt on "Aegean Sea" until "Luwians" is read]

3. In his most famous book, this philosopher wrote that the "primary ineluctable facts of birth and death" hang on every social group which seeks to reproduce itself. This man's ideas and Frederick Taylor's scientific management inspired the "platoons" of the Gary Plan. This man disputed Descartes' claim that all experience is subjective, positing instead that the experiencing mind is part of nature. This man led an academic committee which sought to exonerate Leon Trotsky in the 30s, and called his philosophy "instrumentalism." He updated Plato's theories on childhood and Rousseau's *Emile* while founding the Laboratory School of Chicago, where he stressed socialization and learning by doing. For 10 points, name this American liberal philosopher who wrote *Democracy and Education*.

ANSWER: John **Dewey**

4. This ion is bonded to mevalonate in a late step of the mevalonate pathway, after which that molecule is converted into one consisting of this ion bonded to an isopentenyl group. This ion is covalently bonded to a thiazole, which is bonded to a pyrimidine, in a molecule required as a cofactor for 2-hydroxyphytanoyl-CoA lyase, pyruvate dehydrogenase, and transketolase. This ion is released when DNA polymerase adds a nucleotide to a growing chain. This ion is bonded to thiamine in the most common derivative of vitamin B1. This ion with a 4-minus charge is produced when ATP is hydrolyzed to AMP. For 10 points, name this anion formed from the condensation of two phosphates.

ANSWER: **pyrophosphate** [or **P₂O₇⁴⁻**; or **HP₂O₇³⁻**; or **PPi**; or **diphosphate**; or **dipolyphosphate**; or **pyrophosphoric acid**; or **diphosphoric acid**; or **dipolyphosphoric acid**; accept **phosphate** before "isopentenyl" is read]

5. A poem about this character says of him, "easy as the narrow snake he forked his way along," and concludes, "Than sea and continent there is a larger: it is woe." He is compared favorably with a character who "supplants the balm" from a "consummate cluster" in another poem. The speaker observes, "Now, when I read, I read not," in a poem claiming this character "sets a thing significant." The speaker recalls, "He knew no haste and I had put away my labor and my leisure too" in another poem about him, in which "we passed the school, where children strove at recess in the ring." That poem about this character concludes with the image of horses' heads pointed toward eternity as they pull a carriage. For 10 points, name this personification for whom Emily Dickinson "could not stop."
ANSWER: **Death** [or **Mortality**; or the Frost of **Death**]

6. A historian of this surname chaired the board of President Bill Clinton's Initiative on Race after spending decades updating his pioneering black history survey, titled *From Slavery to Freedom*. Another author of this surname adapted a fictional speech by Father Abraham into his *The Way to Wealth* several years after founding the Leather Apron club, also called the Junto. That man of this surname, who wrote public letters under the persona of the middle-aged woman Silence Dogood, secured a 1777 allegiance with France after news of the victory at Saratoga came to him. For 10 points, give this surname of black historian John Hope as well as the author of the Albany Plan of Union and *Poor Richard's Almanack*, a Pennsylvanian Founding Father who studied electric charge.
ANSWER: **Franklin** [or John Hope **Franklin**; or Benjamin **Franklin**]

7. In one of these poems by this author, the speaker tells three ghostly figures "in placid sandals, and in white robes" on the third time they pass by that they "cannot raise / [his] head cool-bedded in the flowery grass." Those three figures in that poem of this type are Love, Ambition, and Poesy. In another of these poems by this author, the speaker wishes to "leave the world unseen," realizes that "Beauty cannot keep her lustrous eyes," and wonders if the title creature's music was "a vision, or a waking dream." In another of these poems by this man, the speaker observes an "Attic shape" depicting a procession and opines that "beauty is truth, truth beauty." For 10 points, name these poems written by a British Romantic about such subjects as indolence, a nightingale, and a Grecian urn.
ANSWER: **odes** by John **Keats** [prompt on "odes"]

8. A man known primarily for this profession, other than painting, painted a yellow-faced alcoholic with a bottle in his glove, influenced by his alcoholism and Hans Fallada's *The Drinker*. In an inverted-triangle painting, Giacomo Balla depicted the moving hand of a member of this career. The poet-painter Billy Childish also had a career as one. Death, as a skeleton, fills in for this profession in a self-portrait by Arnold Böcklin. Another one of these people floats above some houses while wearing a purple coat in a painting by Marc Chagall, who depicted both "blue" and "green" types of them. A 1921 painting showing three members of this profession dressed as a friar, Pierrot, and Harlequin was done by Pablo Picasso. For 10 points, name this profession that includes guitarists and violinists.
ANSWER: **musicians** [or **singers**; or **guitarists**; or **violinists**; or **fiddlers**; accept **poets** before "hand," if someone tries to argue that Billy Childish is primarily a poet; prompt on "artists"]

9. Prior to Stan Getz's adoption of the song, this musician played Antonio Carlos Jobim's "Desafinado" in a "musical safari" program at the Monterey Jazz Festival in 1961. One of this man's compositions was first recorded under the title "Interlude" by Sarah Vaughan, and he claimed that it was only in exchange for transcribing some of his solos that co-credit for that song was given to Frank Paparelli. He borrowed the chord structure from Paul Whiteman's "Whispering" for a track that has been used to title over a dozen of his compilation albums, "Groovin' High." In the Earl Hines band, he developed bebop with Charlie Parker. For 10 points, name this jazz musician behind "Salt Peanuts" and "A Night in Tunisia" who played with puffed cheeks and a characteristic bent trumpet.
ANSWER: "Dizzy" **Gillespie** [or John Birks **Gillespie**]

10. In the oxymercuration-demercuration reaction, this phenomenon accelerates the reaction by stabilizing the mercurinium intermediate which is reduced in subsequent steps. This phenomenon is the most widely-accepted explanation for a higher-than-expected prevalence of the alpha epimeric form of glucose in solution which exemplifies the anomeric effect. The "negative" type of this effect causes an elongation of the C-F bond in the beta-fluoroethyl anion. This interaction is the reason why the addition of alkyl substituents to carbocations [**carbo-"cat"** "ions"] is accompanied by an increase in stability. For 10 points, name this effect which usually involves the delocalization of bonding carbon-hydrogen sigma-electrons to neighboring nonbonding p-orbitals.

ANSWER: **hyperconjugation**

11. An initially low value for this quantity can cause a J-curve effect when a currency depreciates. Balance of trade improves with currency depreciation if the sum of this value for imports and exports is greater than one, according to the Marshall-Lerner condition. According to Ramsey's formula, an excise tax should be inversely proportional to this quantity in order to reduce deadweight loss. Its reciprocal is equal to the Lerner Index, which measures market power for monopolies. Marginal revenue is equal to "price times one plus the reciprocal of this quantity". This quantity is only positive for Veblen and Giffen goods, and when it equals zero, buyers will pay any amount for a good. For 10 points, name this quantity which measures change in demand with respect to change in price.

ANSWER: price **elasticity** of **demand** [or **PED**; prompt on "elasticity"]

12. Medieval stories from this faith were collected in *The Forest of Thieves and the Magic Garden* by Yale scholar Phyllis Granoff. According to this non-Abrahamic faith, the distant past included "wishing trees," which fulfilled needs when asked. Adherents of this faith believe that as a person behaves badly, particles accumulate on their soul, unless they become a *kevalin*. A minority sect of this religion believes that a great famine broke the transmission of all authentic Agama scriptures, and that Mallinath was a man, like all twenty-three of the other figures it reveres as "ford-builders," or *tirthankaras*. For 10 points, name this faith divided into Svetambara and Digambara sects, a monastic Indian religion founded by Mahavira whose five vows include *ahimsa*, or non-violence.

ANSWER: **Jainism** [or **Jain** Dharma; accept **Svetambara** Jainism until "minority" is read; accept **Digambara** Jainism until "divided" is read]

13. In one play by this author, Risa purposely scars her legs to deflect attention from men, and Memphis Lee tries to negotiate a fair price for a restaurant that is about to be demolished. In another play by this man, a series of mysterious deaths are blamed on the "Ghosts of the Yellow Dog," and a more visible ghost wrestles with a man until they both hear music and the sound of a train whistle. A third play by this author of *Two Trains Running* ends with Gabriel sounding a trumpet to open the gates of Heaven for an adulterous ex-baseball player. That character, Troy Maxson, becomes the first black garbage truck driver in this author's common setting of the Hill district. For 10 points, name this playwright whose ten-play Pittsburgh Cycle includes *The Piano Lesson* and *Fences*.

ANSWER: August **Wilson**

14. One god of this domain, sometimes called Dilimbabbar or Asimbabbar, was conceived after Nuska rowed his father across a river. A man who continuously cuts a self-healing laurel tree accompanies a goddess of this domain. In Mesopotamia, the first child of Enlil and Ninlil was a bull-horned god of this domain, the chief god of Ur, and Ningal's husband; that god is called Nanna or Sin. In Chinese myth, Houyi's wife became the goddess of this domain after drinking an elixir of immortality; that is Chang'e, who lives with a rabbit. The Shinto god of this domain was born when his father washed his right eye. The Greek goddess of it loves the eternally sleeping shepherd Endymion. For 10 points, name this domain of Tsukuyomi, as well as Selene, whom the Romans adapted into Luna.

ANSWER: **moon** gods/goddesses

15. Ernest Bloch's *Suite Hebraique* is for this solo instrument and orchestra, and Max Bruch wrote a double concerto for clarinet and this instrument. A rhapsody for this instrument and orchestra was written by Tibor Serly, who assembled the unfinished sketches of his teacher, Bela Bartok, into one of the most famous concertos for this instrument. Many compositions featuring it were commissioned by Lionel Tertis. Paul Hindemith's *Der Schwanendreher* is a concerto for this instrument. Another composition featuring it concludes with an "Orgy of Brigands." The acquisition of one of these instruments led Paganini to request from Berlioz what became *Harold in Italy*. For 10 points, name this string instrument that plays in the alto clef, and whose size is between that of the cello and violin.

ANSWER: **viola**

16. Pius II wrote how one commander in this conflict ordered women to spread their veils on the ground so that they would catch the enemies' spurs. The banner of one faction in this war featured a red chalice over black, while another group in this war called themselves "Orphans" after their general's death. Polish troops in this war were led by the nephew of Jagiello, Sigismund Korybut. Raids called "beautiful rides" were conducted by Prokop the Great in this conflict, which ended at the Battle of Lipany where the Utraquists defeated the Taborites. At this war's Battle of Vitkov Hill, Jan Zizka used circles of wagons to defend Prague against Emperor Sigismund. For 10 points, name this conflict named for the followers of a Czech reformer who was executed at the Council of Constance.

ANSWER: **Hussite** Wars [or anti-**Hussite** Crusades; prompt on "Bohemian Wars"]

17. The cycle rank, or loop complexity, of a directed graph is related to a quantity for these things according to a theorem devised by Eggen. These things can be converted to an NFA by constructing partial NFAs and putting them together with an epsilon transition, as is done by Thompson's construction algorithm. Like a namesake type of language, these things were developed and formalized by Stephen Kleene, who defined concatenation, union, and his namesake star for them. A backreference in these things can be created using parentheses. The asterisk quantifier is used to match the previous group or character zero or more times in Perl's system for them. For 10 points, identify these notations used for pattern matching that describe a set of strings, so-called "expressions".

ANSWER: **regular expressions** [or **regex**; or **regular sets**; or **rational expressions**; or **regular languages**; accept just **regular** after "expressions" is read; prompt on "patterns"]

18. Some residents of this country celebrate the new year with a day of silence called Nyepi. Following a similar venture in Brazil, Norway offered this nation up to 1 billion dollars to reduce its rate of deforestation, which is the largest in the world despite a 2011 moratorium, and is largely caused by the massive expansion of this country's non-native palm oil industry. Raja Ampat is one of this country's marine biodiversity hotspots formed from extensive coral reefs, and it is home to the pilgrimage sites of Prambanan and Borobudur. This nation's region of Kalimantan is a natural habitat of the orangutan. Sulawesi is part of this nation, which is home to the world's largest Muslim population. For 10 points, name this archipelagic nation with capital at Jakarta on the island of Java.

ANSWER: **Indonesia**

19. Nico van Kampen showed that a linearized set of equations describing these substances exhibits a continuous spectrum of normal modes. These materials can be compressed by the "Z" or "theta" versions of the Bennett pinch, and when mobility in these substances is low, a characteristic distance measure is proportional to the square root of the electron temperature divided by the electron density. Stellarators provide alternatives to devices that use both toroidal and poloidal magnetic field lines in order to confine these substances into torus shapes. These substances, carry very fast oscillations called Langmuir waves, are used in tokamaks, and form atmospheric phenomena like St. Elmo's Fire. For 10 points, name these substances made of ions and electrons, the fourth phase of matter.

ANSWER: **plasmas**

20. This empire's eighteen principal ministers included the *sannidhatri* treasurer and *samahartri* tax collector, who dealt in a silver coin called the *pana*. One ruler of this empire declared that "All men are my children" in a message decoded by James Prinsep. During this empire's tenure, the four Barabar caves were cut out of rock and were likely inhabited by the then-active Ajivika sect. After its last leader was assassinated near Taxila, the Shunga empire succeeded this one, which was visited by the Greek ethnographer Megasthenes. After conquering Kalinga, this empire's most powerful ruler issued the Rock Edicts and became a pacifist. For 10 points, name this ancient empire which defeated Seleucus Nicator, which was founded by Chandragupta and led by the Buddhist convert Ashoka.

ANSWER: Mauryan empire [or Mauryan dynasty]

TB. In a collection of stories by this man, an elderly Englishman destroys a Spanish magazine, drawing the ire of a Lebanese businessman, and the "compound wife" Linda and the homosexual administrator Bobby embark on a road trip across an African country. This author wrote a novel in which the schoolteacher Father Huisams is brutally murdered and the foreigner Yvette has an affair with Salim, who worries about a dictator called the Big Man. In another novel by this man, the title character develops permanent stomach problems after eating seven overripe bananas at one of his many jobs, none of which earn him enough money to keep his own dwelling. For 10 points, name this author of *In A Free State*, *A Bend in the River*, and *A House for Mr. Biswas*, a Trinidadian.

ANSWER: Vidiadhar Surajprasad [V.S.] Naipaul

Bonuses

1. Vitruvius influenced the author of this treatise, which claims that dimensions should follow mathematical ratios also found in musical intervals, thus satisfying a universal mathematical order. For 10 points each:

[10] Name this classic architectural treatise that lays out a series of construction rules and design rules. It was first published in 1570.

ANSWER: The **Four Books of Architecture** [or *I quattro libri dell'architettura*]

[10] Andrea Palladio, who wrote *The Four Books of Architecture*, designed this villa with an exceptionally tall pedestal for the brothers Nicolo and Alvise of the namesake family. Its interior features frescoes by Giambattista Zelotti, who also painted frescoes for the Villa Emo.

ANSWER: **Villa Foscari** [or **La Malcontenta**]

[10] Palladio operated primarily in this Italian city, whose notable buildings include the Doge's Palace.

ANSWER: **Venice**

2. This country's economy crashed when the success of the Haber-Bosch process made it unnecessary for European arms and fertilizer companies to import this country's naturally-occurring nitrate deposits. For 10 points each:

[10] Name this Latin American country, where the "Chicago Boys" implemented monetarist reforms under CIA-backed dictator Augusto Pinochet. It won the War of the Pacific.

ANSWER: Republic of **Chile**

[10] Chile's mines of this metal were nationalized into Codelco by Salvador Allende just before Pinochet's coup.

ANSWER: **copper**

[10] These indigenous people of southern Chile fought several wars against Pedro da Valdivia, and killed him, before the Spanish began exploiting mineral resources there.

ANSWER: **Mapuche** people [or **Araucanians**; or **Araucanos**]

3. The artist of this painting first painted its characteristic small squares, and then applied the solid lines and orange circle, which probably represents the Sun. For 10 points each:

[10] Name this quasi-pointillist painting whose upper half shows a large triangular structure, which may have been inspired by Egyptian pyramids or Mt. Niesen and represents the title mythological mountain.

ANSWER: **Ad Parnassum**

[10] *Ad Parnassum* was painted by this Swiss-German artist who showed a pair of red eyes looking out of a circular head covered by rectangles in his *Senecio*. He also painted *Viaducts Break Ranks*.

ANSWER: Paul **Klee**

[10] Paul Klee reworked his lectures from teaching at this German art school in his *Pedagogical Sketchbook*. Others who taught here include the author of *Point and Line to Plane*, Kandinsky, and its founder, Walter Gropius.

ANSWER: **Bauhaus**

4. The z-score of a data point is equal to the difference between the data point and the mean, divided by this value. For 10 points each:

[10] Name this measure of the data spread, which is equal to the square root of the variance.

ANSWER: **standard deviation** [or **stdev**; or **sd**; or **sigma**]

[10] For a random variable with a finite mean and finite nonzero variance, this man's inequality states that the probability of finding its value more than k standard deviations away from the mean is at most 1 over k squared. He also names two functions in number theory related to the distribution of primes.

ANSWER: Pafnuty **Chebyshev**

[10] Chebyshev's inequality is a specific case of this more general bound in probability theory. It states that for a nonnegative random variable X , the probability of finding X greater than or equal to some a is at most the expectation of X over a .

ANSWER: **Markov**'s inequality

5. This term denotes an old branch of Islamic theology which often used techniques from ancient Greece to defend principles of faith called *Usul al-Din*. For 10 points each:

[10] Give this Arabic term. It also names a syllogistic version of the cosmological argument for God as "first cause," which William Lane Craig brought to Western attention.

ANSWER: kalam [or kalam theology; or kalam principle; or Ilm al-Kalam; or Kalam cosmological argument]

[10] This medieval Judeo-Spanish author of *Mishneh Torah* critiqued *kalam* philosophy for venturing beyond negative attributes to describe God in his *Guide for the Perplexed*.

ANSWER: Moses Maimonides [or Moshe ben Maimon; or Musa ibn Maymun; or Rambam]

[10] This other philosopher from medieval Spain attacked *kalam* theology in his *Decisive Treatise*, and other Islamic doctrines in *The Incoherence of the Incoherence*. Aquinas drew on dozens of commentaries on Aristotle by this man.

ANSWER: Averroes [or ibn Rushd]

6. In a novel, Franz removes one of these objects from Sabina before they make love. For 10 points each:

[10] Name this item of clothing that originally belonged to Sabina's grandfather, and represents her eroticism.

ANSWER: bowler hat [prompt on "hat"]

[10] Sabina's bowler hat appears in this novel set before, during, and after the Prague Spring. In this novel, Tereza names a puppy Karenin after a book that belongs to Tomáš.

ANSWER: *The Unbearable Lightness of Being* [or *L'Insoutenable légèreté de l'être*; or *Nesnesitelná lehkost bytí*]

[10] This Czech author of *The Joke* wrote *The Unbearable Lightness of Being*.

ANSWER: Milan Kundera

7. This thinker proposed a theory of social types including "the stranger," "the mediator," and "the poor," and his most famous book links Ferdinand Tönnies's concept of the transition from *Gemeinschaft* to *Gesellschaft* with the end of the barter economy. For 10 points each:

[10] Name this early sociologist who analyzed economic exchange as a form of social interaction.

ANSWER: Georg Simmel

[10] The aforementioned book by Simmel is titled for the "Philosophy of" this commodity. Simmel argues that the adoption of this commodity created a revolutionary change in social structure.

ANSWER: money

[10] This German acquaintance of Simmel wrote *Georg Simmel as Sociologist*. He put forth his own ideas in *Economy and Society* and *The Protestant Ethic and the Spirit of Capitalism*.

ANSWER: Max Weber

8. This story ends with the single, ominous word "wolves." For 10 points each:

[10] Name this story in which Ulrich von Gradwitz and Georg Znaeym settle a family feud while trapped together under a fallen tree in a disputed patch of forest.

ANSWER: "The Interlopers"

[10] In another story by the author of "The Interlopers," this vengeful, merciless god is worshipped by the sickly boy Conradin, who prays for this "beautiful" creature to kill his cousin Mrs. De Ropp.

ANSWER: Sredni Vashtar [prompt on "ferret"]

[10] The narrator of this third Saki story acknowledges that "romance at short notice" is a specialty of Mrs.

Sappleton's niece, who claims her aunt is expecting her dead husband and brother to walk through the title object.

ANSWER: "The Open Window"

9. This movement foundered after Clara Lum left it for Portland, allegedly carrying with her a 50,000-person contact list so as to redirect all mail for the newspaper *The Apostolic Faith* to herself. For 10 points each:

[10] Name this outpouring of open-air religious activity which began in April 1906. It attracted crowds around black preacher William Seymour in its namesake Los Angeles locale.

ANSWER: **Azusa** Street Revival [or the Outpouring of the Holy Spirit at the **Azusa** Street Mission]

[10] This Christian movement, which emphasizes gifts of the Holy Spirit such as speaking in tongues, began at Azusa Street. The Foursquare Church is in this movement, which broadened into "charismatic" Christianity.

ANSWER: **Pentecostalism** [prompt on "evangelical"]

[10] This New Testament book depicts the original bestowing of the gift of tongues on Pentecost itself. It narrates the spread of Christianity by Jesus's followers after the Gospels.

ANSWER: **Acts** of the Apostles [or **Praxeis** ton Apostolon]

10. Ferenc Szálasi led the Nazi-influenced Arrow Cross Party that ruled this country towards the end of World War II, after it was occupied by Germany during Operation Margarethe. For 10 points each:

[10] Name this European country that was also ruled by Miklós Horthy. It rebelled against the Soviet Union during a 1956 revolution led by Imre Nagy.

ANSWER: **Hungary**

[10] Nagy was succeeded after his second term as prime minister of Hungary by this man, who incorporated free market policies and eased up on *samizdat* publications in his "Goulash Communism."

ANSWER: János **Kádár** [accept János József **Csermanek**]

[10] Nagy's predecessor, Mátyás Rákosi, implemented this divide-and-conquer strategy to eliminate fascists within the Smallholders Party. This strategy involves sowing dissent and dismantling the opposition slice by slice.

ANSWER: **salami tactics** [or **szalámitaktika**; accept **salami-slice strategy**]

11. In this novel, Liu Bei defeats Cao Cao [**tsao tsao**] at the Battle of Red Cliffs with the help of Sun Quan, who later defeats Guan Yu. For 10 points each:

[10] Name this historical novel that takes place during the end of the Han dynasty. It follows a conflict between the states of Wei, Shu, and Eastern Wu.

ANSWER: **Romance of the Three Kingdoms** [or **Sān Guó Yǎn Yì**]

[10] In *Romance of the Three Kingdoms*, this promise makes Liu Bei, Guan Yu, and Zhang Fei sworn brothers during the Yellow Turban Rebellion.

ANSWER: **Oath** of the **Peach Garden** [or **Taovuan san jieyi**]

[10] *Romance of the Three Kingdoms* is by this 14th century Chinese author, who may also have written its fellow Great Classical Novel *Water Margin*.

ANSWER: **Luo** Guanzhong

12. The Kaiser shipyards produced flimsy "liberty ships" very quickly during this war. For 10 points each:

[10] Name this war, in which the United States aided European armies via the "Cash and carry" and Lend-Lease programs before entering active combat. The Battle of Midway was fought during this war.

ANSWER: **World War II** [or **Second World War**]

[10] In a December 1940 press conference, FDR likened Lend-Lease to one of these implements, which one ought to lend to a neighbor whose home is in danger without demanding 15 dollars up-front.

ANSWER: a garden **hose** [or a fire **hose**]

[10] The US lent the Soviets trucks made by this Indiana based car company, which had previously been a huge wagon manufacturer. It underwent severe financial trouble in the 50s after merging with Packard.

ANSWER: **Studebaker** Corporation

13. The inventor of these devices stated in 2006 that he used beer to fill early versions of them, though liquid hydrogen eventually became the accepted fluid. For 10 points each:

[10] Name these physical devices invented by Donald Glaser, which are used to view ionization tracks left behind by charged particles. Unlike their supersaturated-vapor counterparts, these devices use superheated liquid.

ANSWER: bubble chambers

[10] Bubble chambers can be used to determine the ratio of charge to this quantity for the particles. Newton's laws give this quantity as force divided by acceleration.

ANSWER: mass

[10] This other type of particle detector uses crystals that emit low energy photons when hit by high-energy charged particles in their namesake effect. The photons are then collected and amplified by photomultiplier tubes.

ANSWER: scintillators [or scintillation detectors]

14. This event caused Samuel Marsden and Elizabeth Macarthur to flee Parramatta, one of this uprising's targets. For 10 points each:

[10] Name this 1804 revolt of convicts led by Phillip Cunningham and William Johnston. It was quickly put down by George Johnston at the Battle of Vinegar Hill without any losses to his New South Wales troops.

ANSWER: Castle Hill Rebellion

[10] George Johnston also helped overthrow William Bligh as governor of New South Wales when Bligh tried to outlaw bartering for this substance. This alcohol, made from molasses, was critical to the Triangular Trade.

ANSWER: rum [accept Rum Rebellion]

[10] Another Australian revolt, the 1854 Eureka Rebellion, was an uprising of people in this occupation. Their leader Peter Lalor was later elected to the Victorian Legislative Council as a representative of Ballarat.

ANSWER: gold miners [prompt on "miners"]

15. According to the *Prose Edda*, Ullr is a son of this goddess, but not of her husband. For 10 points each:

[10] Name this wife of Thor. The Sons of Ivaldi forged her golden hair.

ANSWER: Sif

[10] The Sons of Ivaldi also forged the ring Draupnir, which was given to this one-eyed "All-Father" of the Norse gods.

ANSWER: Odin

[10] Draupnir was forged as part of a wager with Loki. Because the dwarves won the wager, Brokk was able to enact this punishment on Loki using an awl and the thong Vartari.

ANSWER: sew his mouth shut [accept equivalents]

16. Tumors composed of these cells arise in patients with neurofibromatosis. For 10 points each:

[10] Name these glial cells that myelinate axons in the peripheral nervous system.

ANSWER: Schwann cells

[10] This name is given to the mechanism by which action potentials propagate along axons quickly by jumping across the regions covered by Schwann cells from one node to the next.

ANSWER: saltatory conduction [or saltation]

[10] The rising phase of a neuron's action potential begins when ion channels open to allow an *influx* of cations of this element. An antiporter-like ATPase pumps ions of this alkali metal and ions of potassium in opposite directions.

ANSWER: sodium [or Na⁺]

17. Ferruccio Busoni's edition of this piece, based on earlier manuscripts, is known as the "De Profundis" edition. For 10 points each:

[10] Name this dissonant piece for solo piano and orchestra subtitled "Paraphrase on *Dies Irae*."

ANSWER: **Totentanz** [or **Dance of the Dead**; or **S. 126**]

[10] These nineteen pieces by the composer of *Totentanz* are partly based on folk songs. The ninth is known as the "Pest Carnival," and the second in C-sharp minor is the most well-known.

ANSWER: **Hungarian Rhapsodies** [or **Magyar rapszódíák**; or **S. 244**]

[10] This Hungarian composer and virtuoso pianist wrote *Totentanz* and the *Hungarian Rhapsodies*.

ANSWER: Franz **Liszt**

18. This technique approximates a single N-body wavefunction by a Slater determinant. For 10 points each:

[10] Name this approximate technique in computational chemistry that computes the ground-state energy for many-body systems by writing the electronic wavefunction as a sum of products of single-particle wavefunctions.

ANSWER: **Hartree-Fock** approximation [or **self-consistent field** method]

[10] The Hartree-Fock approximation can be used to approximately construct the wavefunctions of these entities, which are written with a star if they are antibonding, and can also be computed in the LCAO method.

ANSWER: **molecular orbitals** [prompt on "orbitals"; do NOT accept or prompt on "atomic orbitals"]

[10] The LCAO method usually involves the linear combinations of Slater-type orbitals centered at atomic nuclei, but can also be done with a basis set of these. The 3-21G* [three-dash-twenty-one G-star] is a commonly-used basis set of these orbitals.

ANSWER: **gaussian**-type orbitals [or **gaussians**, or **gaussian** orbitals, or **GTOs**]

19. Mick Kelly enjoys listening to a boarder's radio in this novel. For 10 points each:

[10] Name this novel in which Mr. Singer helps the black Dr. Copeland light a cigarette in the rain and allows Jake Blount to explain his transition from evangelist to advocate for workers' rights.

ANSWER: *The **Heart is a Lonely Hunter***

[10] This author of *The Heart is a Lonely Hunter* described the housekeeper Berenice's care of John Henry and the title character in *The Member of the Wedding*.

ANSWER: Carson **McCullers**

[10] This twelve-year-old tomboy is the title character of *The Member of the Wedding*. She longs to escape her hometown by joining her brother Jarvis and his bride on their honeymoon.

ANSWER: **Frankie** Addams [or **Frances** Addams; prompt on "Addams"]

20. This musician contributed backing vocals to the song "Speaking In Tongues" on the Arcade Fire album *The Suburbs*, and he collaborated with Brian Eno on *My Life in the Bush of Ghosts*. For 10 points each:

[10] Name this musician who spoke-sang "Burning Down the House" and "Psycho Killer" as the frontman of Talking Heads.

ANSWER: David **Byrne**

[10] Byrne collaborated on the album *Love This Giant* with Annie Clark, who uses this stage name. "Cruel" and "Cheerleader" appear on her album *Strange Mercy*, and "Birth in Reverse" is the lead single of her 2014 self-titled album.

ANSWER: **St. Vincent**

[10] St. Vincent contributed two songs to this film series: "Roslyn" for the *New Moon* soundtrack, and "The Antidote" for *Breaking Dawn -- Part 2*.

ANSWER: *The **Twilight** Saga*

21. The narrator of this work carries on a two-week affair with a woman he meets on a bus. For 10 points each:

[10] Name this novel in which Sal Paradise becomes fascinated by the con artist Dean Moriarty and is mentored by Old Bull Lee.

ANSWER: **On the Road**

[10] In *On the Road*, this man gets Sal a job as a security guard while trying to sell Sal's screenplay. This man lives in San Francisco with his unpleasant girlfriend Lee Ann.

ANSWER: **Remi** Boncoeur [or Remi **Boncoeur**]

[10] Jack Kerouac's *On the Road* fits into this genre of literature that involves real people and events written as fiction. *The Bell Jar* is another example of this genre.

ANSWER: **roman à clef** [or **roman à clé**]