



# ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS  
PACKET BY STANFORD B AND COLUMBIA

## TOSSUPS

1. One character in this novel used to practice making sad faces in the mirror while quoting Sydney Carton's lines from *A Tale of Two Cities*. After falling in love with the Irish Father Mulligan and joining a convent, another character in this novel obtains a diploma in ornamental gardening; that character is later humiliated when a group of protesters force her to wave a red flag and chant Communist slogans. A character in this novel thinks "Two Thoughts", namely that "Anything can happen to anyone" and "It's best to be prepared", while working at Paradise Pickles. During a performance of the *Sound of Music* in this novel, one of the protagonists is forced to masturbate a snack vendor. The "Love Laws" are a recurring motif in this novel, in which Sophie's drowning leads Baby Kochamma to accuse the untouchable Velutha of raping Ammu. For 10 points, name this novel that ends with the establishment of an incestuous relationship between the twins Rahel and Estha, the debut novel of Arundhati Roy.

ANSWER: The God of Small Things

2. One protein which regulates this substance is defective in ATRX syndrome. Rhabdoid tumors and choroid plexus carcinoma are linked to mutations in a gene which regulates this substance known as SMARCB1. ATP-dependent proteins which alter the structure of this substance include the ISWI, INO80, and NuRD protein families, which are "remodelers" of this substance. Proteins with a bromodomain motif recognize acetylated sites in this substance, which coils into a helical structure known as the 30 nm fiber. HP1 binds to the hetero- form of this material, which stains more darkly than its loosely-packed form. This substance is described as "beads on a string," where the beads are nucleosomes. It consists of interphase DNA wrapped around histones. For 10 points, name this substance involved in packaging and protecting cellular DNA which condenses to form chromosomes.

ANSWER: chromatin [or heterochromatin; or euchromatin; prompt on "DNA", "histones", "chromosomes", and "nucleosomes" until they are read]

3. This writer gave a lecture stating that the hidden treasures are a library's books, which he suggests men use to find a "position in life." In another lecture, this writer stated that man's intellect is for creation, conquest and adventure, while a woman's intellect is for sweet ordering and decision, and that a woman's greatest function is Praise. This writer penned a series of epistles to the workers of Great Britain in his last work, *Fors Clavigera*. This author included "Of Kings' Treasuries" and "Of Queen's Gardens" in his collection *Sesame and Lilies*. In another work, he cites Oliver Wendell Holmes' line about a golden crocus to define the error of ascribing human emotions to inanimate things, which he calls the "pathetic fallacy." That five-volume work by this writer defends the landscapes of J.M.W. Turner over the old masters. For 10 points, name this author of *Modern Painters* and *The Stones of Venice*, a Victorian art critic.

ANSWER: John Ruskin

4. This pope called a synod at Melfi where he controversially appointed the monk Rangerius to the see of Reggio. He was present at the Siege of Capua, where he conferred special privileges on the uncle of Roger Borsa. At another synod, this pope received the confession of Eupraxia of Kiev, who claimed that she was forced into orgies and a black mass. He excommunicated one ruler for his illegal marriage to Bertrade de Montfort, and another ruler for supporting his rival Clement III. This pope, who presided over the Council of Piacenza, was recorded by Fulcher of Chartres, and was originally a pupil of the man who founded the Carthusian Order, Saint Bruno of Cologne. This pope agreed to receive the ambassadors of Alexius I Comnenus, after which he gave a speech that evoked the chant "God wills it!," inspiring men like Bohemond of Taranto. For 10 points, name this Pope who called the First Crusade at the Council of Clermont.

ANSWER: Pope Urban II [or Odo de Lagery; or Odo of Chatillon-sur-Marne; or Otho of Lagny; or Eudes; prompt on "Pope Urban"]

5. The suggestion that Angelus Silesius inspired the final line of this work is discussed in James Atkinson's treatment of its author. At the end of this book, the author notes "the problems of life have remained untouched" even after "all possible scientific questions have been answered," concluding that when "there are no questions left ... this itself is the answer." This work claims that the theory of probability is founded on the fact that truth-functions can be arranged in series. A later section distinguishes between concepts and formal concepts, claiming that the use of formal concepts in propositions will result in "senseless pseudo-propositions." This text was the only book its author published during his lifetime and introduces his "picture theory of meaning." "Whereof one cannot speak, thereof one must be silent" according to, for 10 points, what set of numbered statements by Ludwig Wittgenstein?

ANSWER: Tractatus Logico-Philosophicus [or Logical-Philosophical Treatise; or Wittgenstein's Tractatus; prompt on "Tractatus"]

6. A recurring theme in this work consists of rising sixteenth note-dotted eighth note pattern from a low E-flat to a G. Its first section opens with a descending B-flat minor scale in which each note is held by the strings until the entire scale is heard simultaneously. In its thirteenth section, an unusual passage for solo oboe slowly builds up with the return of many previous themes into a triumphant C major version of the "sun theme". Like its composer's Op. 35, this piece has the oboe and E-flat clarinet flutter-tongue to depict sheep grazing in a pasture. This work depicts a hunting party using 12 offstage horns, and its score also calls for a heckelphone, a wind machine and a thunder machine. A march for the lower strings with many upward leaps suggestive of climbing appears in its third section, "The Ascent." For 10 points, name this musical depiction of a day in a European mountain range, a work by Richard Strauss that despite its name is actually a tone poem.

ANSWER: An Alpine Symphony [or Eine Alpensinfonie; or Richard Strauss's Opus 64]

7. During one incident in this conflict, a force under Lieutenant Abraham Cuyler was surprised upon landing at Point Pelee, and barely escaped with three ships intact. Towards the end of this conflict, a group under porter master John Stedman was attacked after departing from Fort Schlosser, and reinforcements from John Wilkins failed to arrive in time. That event, called the Devil's Hole Massacre, may have been perpetrated by a figure known as Farmer's Brother. Donald Campbell had his body dismembered and his heart eaten after being taken prisoner in a siege that could not be resisted by Henry Gladwin, leading to the Battle of Bushy Run where Jeffrey Amherst failed to retake the region. This conflict, which began with the siege of Fort Detroit, led directly to issuance of the Proclamation of 1763. For 10 points, name this rebellion started by an Ottawa chief in the Great Lakes region.

ANSWER: Pontiac's Rebellion [or Pontiac's War; or Pontiac's Conspiracy]

8. The Wigner D-matrices can be expanded simply in terms of these functions. The fact that the sum of the squares of a subset of these functions equals a constant is used to prove Unsold's theorem. Applying the spin-raising operator to these functions yields their "spin-weighted" counterparts. Multiplying these functions by a factor of "r raised to the l" yields their "solid" counterparts. The simplest of these functions equals one over the square root of 4 pi. These functions of two variables can be reduced to functions of one variable by converting them to their associated Legendre polynomials. They are the eigenfunctions of the operators for the z-component of angular momentum and the square of angular momentum. The angular portion of the wavefunction of the hydrogen atom consists of these functions. For 10 points, name these functions denoted Y<sub>lm</sub> which arise when solving Laplace's equation in spherical coordinates.

ANSWER: spherical harmonics [or associated Legendre polynomials until "Unsold's theorem" is read]

9. One character in this short story calls another a "Rosicrucian" while explaining his views on children's physical education, and is deemed a "tiresome old red-nosed imbecile" by the narrator. The narrator of this short story says that a certain word reminds him of "the word gnomon in the Euclid and the word simony in the Catechism", and gets annoyed when Old Cotter refers to him as a child. At its end, one of the title characters recounts an anecdote in which O'Rourke discovers a man laughing to himself in a confession box. Those title characters serve the narrator crackers and sherry while discussing their recently deceased family member, who had a mental breakdown after accidentally breaking a chalice. The narrator repeats the word "paralysis" to himself after his mentor, Father Flynn, dies of a stroke. For 10 points, name this first story in James Joyce's *Dubliners*.

ANSWER: "The Sisters"

10. In the *Mahabharata*, the son of a god who has this role proves himself superior to the son of another god by knocking out his own teeth to give a beggar some alms. The Baltic god who served this role was married to Menes, who had an affair with Ausrine. The Gayatri mantra prominently mentions a Vedic deity responsible for an aspect of this domain called Savitr. Arvak and Alsvid serve one god of this domain, while another such god rides in a chariot pulled by seven horses. After Tecciztecatl proves to be too cowardly, Nanahuatzin calmly walks into a bonfire and becomes the final god of this domain in Aztec myth. The severed asura head Rahu in Hindu myth and the varg Sköll in Norse myth both seek to devour the representation of a god of this domain. Heracles once received a golden goblet from a god with this role after he aimed at arrow at it when he became too hot. For 10 points, name this domain of gods like Surya and Helios.

ANSWER: the Sun [or sun gods/goddesses/deities; or solar deities; or obvious equivalents]

11. While in Gallipoli, this man was often visited in his prison, called the "Tower of Strength." His followers eventually divided into family branches including Kapancı and Yakubi. This man's birth is prophesied in a forged document titled "The Great Wisdom of Solomon." His teacher Joseph Escapa excommunicated him after he was expelled for staging a wedding service in which he pretended to marry the Torah. Descendants of his followers were known as dönme, or converts; those descendants followed syncretic traditions drawing from Sufi Islam. Followed by Nathan of Gaza, this Romaniote preached in Salonica until he was forced into exile after proclaiming himself Eyn Sof, the Kabbalistic origin of all things. A book about him by Gershom Scholem is subtitled the "Mystical Messiah." For 10 points, name this man who claimed to be the Jewish messiah in the 17th century Ottoman Empire.

ANSWER: Shabtai Tzvi [or Sabetay Sevi; or Shabbetai Zvi; or Sabbatai]

12. A poem by this man that notes that "Soft airs, and song, and light, and bloom" should keep friends "lingering by my tomb" was praised by Edgar Allan Poe in "The Poetic Principle". Another of his poems contains the line "Truth, crushed to earth, shall rise again", which was quoted by MLK Jr. in his "Give Us the Ballot" speech. This author of "June" and "Battle-field" gained early popularity with a political satire that opens with the couplet "When private faith and public trust are sold, and traitors barter liberty for gold". He wrote a poem that describes a "a Power whose care / teaches thy way along that pathless coast" and asks its addressee if it "seek'st" the "plashy brink". That poem by this man notes that "the abyss of heaven / Hath swallowed up" the title figure, who is asked "whither, midst falling dew [...] dost thou pursue thy solitary way?" For 10 points, name this author of the anti-Jeffersonian poem "The Embargo," a longtime editor of the *New York Evening Post* whose poems include "To a Waterfowl."

ANSWER: William Cullen Bryant

13. This element is used to reduce nitrogen oxides to elemental nitrogen in CHN analyzers. Indium, gallium, selenium, and this element make up a common thin-film solar cell. Plastocyanin and azurin are members of a class of redox-performing proteins which have "blue centers" named for this element. This element's chloride is used to regenerate the palladium chloride catalyst used to oxidize ethylene to acetaldehyde in the Wacker process. This element is in the +1 oxidation state in a catalyst used to form aryl halides from diazonium salts. This element and lithium are found in a class of compounds which selectively performs 1,4-conjugate additions to carbonyls. This element gives off a blueish-green color in the flame test, and it is used in the Sandmeyer reaction and Gilman reagents. For 10 points, name this element which forms an alloy with tin called bronze.

ANSWER: copper

14. During this conflict, a group of five Benedictines, including Bishop Cassian Spiss, were waylaid and murdered by attackers who stole the bishop's mass kit, which was recovered in 1983. One side in this conflict wore headbands of millet stalks, and were led by men called "white hen" in homage to the god Chimulungu, who was worshiped in the Songea District. They called the opposing side "red earth" and referred to their military style as "women's dance." The rebels in this conflict had success at Liwale and Samanga, before the troops of Gustav von Gotzen decimated the Ngoni camp near Mahenge. The rebel commander Kinjikitile Ngwale, supposedly possessed by the snake spirit Hongo, mixed castor oil into a potion that he promised would turn bullets to water. For 10 points, name this 1905 revolt in German East Africa, which translates in Swahili as "Water-Water."

ANSWER: Maji Maji Rebellion [or Maji Maji War]

15. Personal and vocational anxieties give rise to the “pseudo-“ form of this phenomenon according to a model of Lionel Ovesey. Charles Socarides proposed the conflict model of this trait, suggesting that it arises from a drive that has undergone excessive transformation. The Rorschach, TAT and MAPS exams were given to thirty people with this quality by Evelyn Hooker, who found no linkage between it and intelligence. Irving Beiber conducted a 1962 study of 106 men with this condition, which he noted manifested as personality defects. In a 1935 letter, Sigmund Freud inferred a woman’s son had this condition, even though she never explicitly stated it. This condition was removed as a mental disorder from the Diagnostic Statistical Manual in 1986. For 10 points, name this tendency that is indicated by a high value on the Kinsey scale, which was considered a psychosexual illness for much of the early twentieth century.

ANSWER: **homosexuality** [or obvious equivalents, such as being **gay** or **lesbian**; do NOT accept bisexual, since all of these psychologists explicitly have an alternate theory of “bisexuality”]

16. One part of this speech attacks the hypocrisy of those who “hurl anathemas at the crowned headed tyrants of Russia and Austria” and those who “shed tears over fallen Hungary.” This speech quotes *Julius Caesar* to say “the evil that men do lives after them, the good is oft-interred with their bones.” The speaker discusses his childhood as a resident of Fell’s Point in Baltimore, where he observed Austin Woldfolk operating on Pratt Street. The speaker concludes by asking every heart to join him in reciting a poem that begins “God speed the year of jubilee!” and is entitled “The Triumph of Freedom.” This speech, delivered at Corinthian Hall to the Rochester Anti-Slavery Sewing Society in 1852, answers its title query by saying that it’s just a “day that reveals the gross injustice and cruelty” to which the title person is a victim. For 10 points, name this speech given by Frederick Douglass, which attacks the hypocrisy of a patriotic American holiday.

ANSWER: **“What to the Slave is the Fourth of July?”**

17. To paint one of his animal subjects in detail, this artist wired it to stakes and buried it in a snow drift. This artist painted a series of watercolors based on visits to the Adirondacks and depicted a group of women getting ready for “Pinkster” by sewing a man into his Harlequin costume in *Carnival*. This artist’s witnessing of a woman being rescued by means of a breeches buoy inspired his work *The Life Line*. Earlier works including depictions of a veteran with a scythe and of General Barlow escorting Confederate prisoners grew out of his stint illustrating Civil War scenes for *Harper’s Weekly*. Two barefoot boys are seen tumbling in front of a barn in a painting of his depicting a children’s game, while another painting depicts a water spout in the upper right as a solitary black man lies on a boat surrounded by sharks. For 10 points, identify this American artist of *Snap the Whip* and *The Gulf Stream*.

ANSWER: Winslow **Homer**

18. This character communicates with another by knocking on her skull, using one knock for yes, two for no, three for I don’t know, and four for money. In his last appearance, this character is told “don’t fret...we’re coming” after he falls into a ditch. After this character’s good leg goes stiff, he uses his crutches to crawl through a forest where he meets and eventually kills a charcoal burner. At one point, this character discloses that he averages a little over sixteen farts an hour, and he struggles to devise a system of organization for the sixteen stones he keeps in his pocket, his “sucking stones”. He spends a year in the care of the motherly “Mrs. Loy... or Lousse” after killing her dog with his bicycle while on the way to see his mother. The messenger Gaber conveys a message from Youdi to the detective Jacques Moran, assigning the latter to track down this character. For 10 points, name this title character of a 1951 novel that precedes *Malone Dies* and *The Unnamable* in a trilogy by Samuel Beckett.

ANSWER: **Molloy**

19. This man gives his name to a spectroscopic technique of using atomic collisions to narrow Doppler Broadening. With his student H.M. Goldenberg, this scientist erroneously found that the sun had an oblate bulge of about 42 kilometers, though he later gave a tight limit on actual solar oblateness. Those solar experiments were designed to test a theory that features an equation that sets the covariant wave operator equal to  $8\pi$  times the stress energy tensor divided by 3 plus two times this scientist’s namesake coupling constant. After he re-performed Loránd Eötvös’s experiment to confirm that inertial mass and gravitational mass were indistinguishable, this man and an alphabetically prior colleague developed a scalar-tensor alternative to general relativity. For 10 points, name this cosmologist who proposed a theory of gravity with Carl Brans.

ANSWER: Robert **Dicke**

20. While serving as Minister of the Colonies, this man passed a law requiring any person intending to make movies or sound recordings to file a written request with the Lieutenant Governor of their colony. In a notable speech, he made a call for peace by referring to Stockholm as the “polar star,” associating him with the socialist group “Bonnet rouge.” This politician, who was supported by Otto Abetz, forcibly conscripted young men after his program to exchange one freed prisoner for three volunteers, called “La Releve,” did not gain support. He opposed the “wait and see” doctrine championed by his predecessor, Jean-Francois Darlan. This man proposed the transfer of Abyssinia to Italy in an agreement negotiated with Foreign Secretary Samuel Hoare in 1935. After a failed suicide attempt, he was executed at Fresnes prison in 1945, five years after becoming Minister of State under Henri Pétain. For 10 points, name this prime minister of the Vichy regime in France.

ANSWER: Pierre Laval

TIEBREAKER

21. One of this organization’s founders attacked their nation’s foreign policy in the speech “Another View of Things.” Before being executed, that person wrote a farewell letter ending with the declaration “I am, I was, I shall be!” Sailors possibly sympathetic towards this organization rioted after being denied pay during the Christmas Crisis. This organization was the first to publish the *Red Flag* newspaper, and its prominent members included August Thalheimer and Clara Zetkin. In one conflict, this organization’s members were opposed by units lead Gustav Noske. The leaders of this organization were executed by members of the Freikorps after a failed revolt against Friedrich Ebert’s government, including its founders Karl Liebknecht and Rosa Luxembourg. For 10 points, name this German Marxist group that launched a failed namesake uprising in January 1919.

ANSWER: Spartacus League [or Spartacist League; or Spartakusbund]

BONUSES

1. Answer the following about the catastrophe paradigm in archaeology, for 10 points each.

[10] Rand Flem-Ath's *When the Sky Fell* argues that a technologically advanced civilization on Antarctica was destroyed as a result of the movement of earth's mantle, a hypothesis given this name. Albert Einstein suggested that it was possibly true in the introduction to Charles Hapgood's book that first proposed it.

ANSWER: pole shift hypothesis

[10] The catastrophe paradigm was reinvigorated after this scientist published *T-Rex and the Crater of Doom*, which argued that earth's mass extinctions were caused by a meteorite impact. He won a Nobel Prize with his father Luis.

ANSWER: Walter Alvarez

[10] Many catastrophist pseudo-archaeologists try to search for evidence that this Biblical event occurred. Ignatius Donnelly's *Atlantis: The Antediluvian World* supposedly describes a civilization that existed before it.

ANSWER: The Great Flood

2. Identify some Roman poets who actually wrote about women, for 10 points each.

[10] This man addressed many of his *carmina* to a woman named Lesbia. He described being "torn apart" by the title feelings in "Odi et Amo" and vowed to "sodomize and face-fuck" his rivals in another poem.

ANSWER: Gaius Valerius Catullus

[10] This author's satirical poem "Types of Women" describes Zeus creating ten types of women. The first nine women come from various animals and are degenerate, but the tenth one, who is born from a bee, is virtuous.

ANSWER: Simonides of Amorgos [or Semonides of Amorgos; do NOT accept "Simonides of Ceos"]

[10] This Augustan poet addressed many of his poems to his lover Cynthia. His only surviving works are four books of *Elegies*, whose poem addressed to Tullus praises him for teaching him to not love chaste women.

ANSWER: Sextus Propertius

3. Name these people who are not porn actresses, but nonetheless appear on Jerry Vinokurov's favorite Wiki, Anything Pirates, for 10 points each.

[10] This Welsh captain of the HMS *Oxford* received his ship directly from Port Royal under the direction to continue raiding Spanish settlements. Despite his illustrious career, today he's best known as the namesake of a brand of rum.

ANSWER: Henry Morgan

[10] This Spanish Admiral is most notable for founding St. Augustine in 1565. His seizure of the French Huguenots' Fort Caroline solidified his favor with Philip II, who later appointed him the first Governor of Florida.

ANSWER: Pedro de Avilés [or Pedro Menéndez de Avilés]

[10] This other Welsh pirate known as "Black Bart" captured more ships than Blackbeard and Calico Jack put together. He terrorized Newfoundland in 1720, then started calling himself the "Admiral of the Leeward Islands" on his flagship, the *Royal Fortune*.

ANSWER: Bartholomew Roberts

4. For 10 points each, answer these questions about compiler architecture.

[10] Like many compilers, the GNU C Compiler since version 4 makes use of an intermediate representation with this property, which requires that variables be split into "versions" that each receive only one value.

ANSWER: static single assignment form [or SSA]

[10] SSA form makes this process of improving the efficiency of compiled code much easier. Loop unwinding and constant propagation are often part of this process.

ANSWER: optimization [or word forms]

[10] This multi-language compiler project began under Vikram Adve's direction at the University of Illinois and uses an SSA-based "universal" intermediate representation that has three isomorphic forms. Clang, the only front end developed as part of this project, is the default compiler for several BSD flavors.

ANSWER: LLVM Compiler Infrastructure [or Low Level Virtual Machine]

5. A character in this novella claims that another of its characters stabbed his own brother with a pitchfork in a quarrel over a lost harmonica. For 10 points each:

[10] Identify this novella in which Royal Earle Thompson kills the bounty hunter Homer Hatch in order to protect the Swedish farmhand Olaf Helton.

ANSWER: Noon Wine

[10] In 1939, *Noon Wine* was published alongside *Old Mortality* in a collection titled for this novella, in which Miranda survives the 1918 Spanish flu epidemic only to find that her caregiver, a soldier named Adam, caught the disease from her and died.

ANSWER: Pale Horse, Pale Rider

[10] This Texas-born author of *Pale Horse, Pale Rider* also wrote the collection *Flowering Judas and Other Stories* and the bestselling novel of 1962, *Ship of Fools*. She was related to O. Henry.

ANSWER: Katherine Anne Porter

6. For 10 points each, answer the following about the philosophical controversy surrounding demonstratives.

[10] In “On Denoting” this author distinguishes between a singular form of the article “the” and a plural form of “the” to outline a descriptivist theory of descriptions. He also wrote “Why I am not a Christian.”

ANSWER: Bertrand Russell

[10] This paper by David Kaplan argues that demonstratives, like names, are rigid designators. Its title refers to a one-term logical operator that would rigidly designate.

ANSWER: “Dthat” (“Dee-that”)

[10] This philosopher suggested that Bertrand Russell’s theory of definite descriptions doesn’t work in *Meaning and Necessity*, which provides a history of attempts to solve the problem of descriptions. He called for the elimination of metaphysics in *Pseudoproblems of Philosophy*.

ANSWER: Rudolf Carnap

7. Identify the following aspects of Incan culture, for 10 points each.

[10] The Incans spoke a variant of this language, which was an offshoot of the local Aymara. Works in this language like Garcilaso de la Vega’s *Commentaries* were often banned by the Spanish.

ANSWER: Quechuan [or runa simi]

[10] These messengers announced their presence with *pututus*, a special type of trumpet made from a conch shell. They utilized the Inca’s large network of roads to transport messages from Cuzco to Quito within a week.

ANSWER: Chaski [or Chasqui]

[10] Family groups or clans within the Inca Empire were given this name derived from Quechua and Aymara. The leader of each group was known as a condor, and most worshiped a unique local god called a wak’a.

ANSWER: Ayllu [or Ayllus]

8. This section of a larger musical work begins with every instrument holding a loud C, and is notable for its lack of cadences at the end of phrases. For 10 points each:

[10] Name this C minor piece that depicts existence before God’s declaration “let there be light!” It is the first section of *The Creation*.

ANSWER: “The Representation of Chaos” [or “Die Vorstellung des Chaos”]

[10] *The Creation* is the best known oratorio by this Austrian composer of the *London* and *Surprise* symphonies.

ANSWER: Joseph Haydn [or Franz Joseph Haydn]

[10] Bass trombonists are often asked to play excerpts from this section of *The Creation*, the last in part II, at auditions. This section, written in B flat major, celebrates the completion of the world.

ANSWER: “Achieved is the Glorious Work” [or “Vollendet ist das grosse Werk”; or reasonable translations, such as “Fulfilled at Last the Great Work”]

9. Particles outside the “loss cone” will escape this configuration, whose namesake “ratio” is the ratio of the maximum B-field to the minimum B-field. For 10 points each:

[10] Name this magnetic field configuration which traps charged particles in a region of low magnetic field between two regions of high magnetic field.

ANSWER: magnetic **mirror**

[10] Magnetic mirrors work because as the B-field strength increases, the radius named for this scientist decreases. This scientist names a quantity equal to the product of the gyromagnetic ratio and the B-field.

ANSWER: Joseph **Larmor** [or **Larmor** radius; or **Larmor** frequency; or **Larmor** precession]

[10] Larmor names a version of this type of motion, in which the angular momentum vector of a rotating body rotates around the axis of rotation.

ANSWER: **precession**

10. Answer some questions about “Islamophobia” in places that are not liberal democracies, for 10 points each.

[10] The 9-6-9 movement of Buddhist fanatic Ashin Wirathu routinely attacks Muslims in this country, home to pro-democracy opposition leader Aung San Suu Kyi.

ANSWER: **Burma** [or Republic of the Union of **Myanmar**; or Pyidaunzu Thanmăda **Myăma** Nainngandaw]

[10] These Muslim peoples of Myanmar, located primarily in the Arakan state, were denied citizenship by Ne Win, because they were derided as unwelcome immigrants from Bangladesh that profaned the Buddhist images. A Patriotic Front of these people was established under Muhammad Jafar Habib.

ANSWER: **Rohingya**

[10] Christian and animist anti-*balaka* militias have been responsible for numerous deadly attacks on Muslim communities in this capital city following the seizure of power in 2013 by the Séléka movement, forcing president Francois Bozizé to flee.

ANSWER: **Bangui** [capital of the Central African Republic]

11. Answer the following about women writing around the time of the Civil War, for 10 points each.

[10] This woman, a prominent Charleston socialite whose husband was an aide to Jefferson Davis, wrote an extensive diary of the Civil War, published posthumously by her friend Isabella Martin under the 1905 title *A Diary from Dixie*.

ANSWER: Mary Boykin **Chesnut** [or Mary Boykin **Miller**]

[10] Although Ike Jose only cares about her first novel, *The Hermaphrodite*, this abolitionist and suffragette edited her husband’s newspaper “The Commonwealth,” and is well-known for writing “The Battle Hymn of the Republic.”

ANSWER: Julia Ward **Howe**

[10] The author of “Mary Had a Little Lamb,” Sarah Josepha Hale, served as editor of this popular women’s monthly magazine in Philadelphia from 1837 to 1877, which fired Sara Jane Lippincott in 1850 after she published letters from the National Era denouncing slavery.

ANSWER: **Godey’s** Lady’s Book [or **Godey’s** Magazine and Lady’s Book]

12. The line “Crown’d with the sickle and the wheaten sheaf” begins this man’s quartet of poems *The Seasons*, which was the subject of two famous copyright law cases. For 10 points each:

[10] Name this author of an elegy for Isaac Newton and the poem *The Castle of Indolence*. He wrote “When Britain first, at heaven’s command / arose from out the azure main” to open his most famous work, “Rule Britannia.”

ANSWER: James **Thomson**

[10] Thomson’s *The Seasons* inspired this so-called “Northamptonshire Peasant Poet” to write his first poem. He wrote “I am—yet what I am none cares or knows” in his “I Am”, which was written in an insane asylum.

ANSWER: John **Clare**

[10] Clare praised these birds for being “as free from danger as the heavens are free”. Shelley asked one to “teach me half the gladness / they brain must know” in an ode to one that opens “Hail to thee, blithe Spirit!”

ANSWER: a **skylark**

13. Sufferers of Cockayne syndrome and Xeroderma pigmentosum have defects in this process. For 10 points each:  
[10] Identify this form of DNA repair used to repair damage caused by ultraviolet light. In prokaryotes, this form of repair is initiated when structural distortions in DNA are detected by the UvrABC complex, which then makes nicks used to isolate and remove the damaged segments.

ANSWER: **nucleotide excision repair** [or **NER**; do NOT accept or prompt on other forms of repair]

[10] Bacteria, fungi, and non-placental mammals use this class of enzymes to repair UV-induced DNA damage via photoreactivation. These flavoproteins bind to cyclobutane bridges between two adjacent bases on a single strand of DNA.

ANSWER: **photolyases**

[10] During DNA damage tolerance processes, translesion synthesis uses one of these enzymes numbered IV or V to replicate past thymine dimers and AP sites. These enzymes typically use a primer to add nucleotides to the 3 prime end during replication.

ANSWER: **DNA polymerase** [prompt on “polymerases”]

14. Answer these questions about deaths in the *Iliad*, for 10 points each.

[10] Homer spends fifteen lines describing Ajax the Greater’s killing of this young Trojan warrior, a son of Anthemion who is described as a black poplar tree cut down to build the wheel of a chariot.

ANSWER: **Simoeisios**

[10] This friend of Achilles is killed while wearing Achilles’ armor in an attempt to instill morale in the Greek troops, after which Achilles holds funeral games in his honor and kills Hector in revenge.

ANSWER: **Patroclus**

[10] In this book, which was possibly added later to the *Iliad*, Odysseus and Diomedes engage in a nighttime mission in which they slay the Thracian king Rhesus and kill a cowardly Trojan spy for whom this book is sometimes named.

ANSWER: Book **X** [or the **Doloneia**]

15. For 10 points each, answer the following about Byzantine art.

[10] Much of medieval Byzantine art consisted of these small, devotional images of Christian significance. They give their name to a period of time in which religious images were banned and destroyed.

ANSWER: **icons**

[10] The Novgorod school of icon painting followed the model begun by this master of the icon and teacher of Andrei Rublev, who depicted Abraham being visited by three angels in *The Holy Trinity*.

ANSWER: **Theophanes** the Greek

[10] Perhaps the largest program of Byzantine Art in good condition are the series of mosaics depicting Justinian and Theodora in this Ravenna church.

ANSWER: Basilica of **San Vitale** [or Church of **San Vitale**]

16. The narrator of this novel delays his trip back to Madrid in order to visit his friend’s country house near Traich, where the housekeeper tells him about a wild party shortly before that friend’s death. For 10 points each:

[10] Name this 1983 novel, written as a single-paragraph interior monologue, whose narrator struggles to understand his friend Wertheimer’s suicide and its relationship to the piano virtuoso Glenn Gould.

ANSWER: The **Loser** [or Der **Untergeher**]

[10] *The Loser* was written by this author of *The Lime Works*. Roithamer lives in “thought dungeon” in the forest, where he designs a cone-shaped house for his sister, in this man’s novel *Correction*.

ANSWER: Thomas **Bernhard** [or Nicolaas Thomas **Bernhard**]

[10] Thomas Bernhard is from, and bore a legendary disgust for, this modern-day European country, whose capital city was the home of the coffee-house culture that popularized Karl Kraus, Arthur Schnitzler, and Stefan Zweig.

ANSWER: Republic of **Austria** [or Republik **Österreich**]

17. Quintus Metellus Scipio escaped this battle, but committed suicide in a naval skirmish months later at Hippo Regius, and this clash was quickly followed by the Battle of Munda. For 10 points each:

[10] Name this 46 BC battle where an epileptic Julius Caesar defeated a force of Optimates under Scipio, which included the cavalry of Titus Labienus, and Juba I of Numidia.

ANSWER: Battle of **Thapsus**

[10] Caesar then proceeded to march on Utica, but before he could get there, this man committed suicide. He first tried to stab himself with his sword, but when he failed because of an injured hand, he had to tear his own entrails out of his wound, according to Plutarch.

ANSWER: **Cato the Younger** [or **Cato Minor**; or Marcus Porcius **Cato Uticensis**; prompt on “**Cato**”]

[10] Thapsus may be the last significant western use in battle of these combat creatures, notably employed by Indian king Porus at the Battle of the Hydaspes.

ANSWER: war **elephants**

18. Ahmed Zewail became the first Egyptian to receive a Nobel Prize in a scientific subject for his pioneering work in this field. For 10 points each:

[10] Name this field of chemistry which uses ultrafast laser pulses to observe chemical reactions on extremely small timescales.

ANSWER: **femtochemistry** [or **femtosecond spectroscopy**]

[10] A common approach in femtochemistry is this spectroscopic technique used in transient IR spectroscopy, which uses one laser to excite a sample and a second laser to observe the resulting signal.

ANSWER: **pump-probe** spectroscopy

[10] Femtochemistry is useful for observing these states in a chemical reaction, in which the energy is maximized along the reaction pathway. They are often symbolized using a double-dagger.

ANSWER: **transition states** [or **activated complexes**]

19. This spiritual path was founded by Sultan Sahak, who is considered the primary avatar in the Fourth Epoch, and the last total manifestation of the divine essence. For 10 points each:

[10] Name this minority religion of northeastern Kurds, concentrated largely in Iran’s Kermanshah province. Their main scripture, the Kalâm-e Saranjâm, consists of orally-transmitted Gorani Kurdish poetry.

ANSWER: **Yarsanism** [or **Ahl-e Hagh**; or **Ahl al-Haqq**]

[10] The word mazhar, or “manifestation,” applied to Sultan Sahak is shared with the Bahá’í faith. The Universal House of Justice, which has its seat in this city, has decreed that it cannot appoint a new head of Baha’i, but it can work to identify new mazhars of God as they appear.

ANSWER: **Haifa**, Israel

[10] Another manifestation in Baha’i is Zoroaster, who composed these sacred hymns that appear in the Yasna texts. They number 17 in total and include the Ushtavaiti, directed at having happiness.

ANSWER: **Gathas**

20. This musician’s life inspired the Kirk Douglas film *Young Man With a Horn*. For 10 points each:

[10] Name this composer of the piano piece “In a Mist,” a jazz cornetist who recorded “Singin’ the Blues” in 1927 alongside Frankie Trumbauer. He died in 1931 at the age of 28.

ANSWER: Leon “Bix” **Beiderbecke**

[10] Bix Beiderbecke was admired by this trumpeter, who collaborated with Ella Fitzgerald on the album *Porgy and Bess*, and won a Grammy for his version of “Hello, Dolly!” He was the first to record “What a Wonderful World.”

ANSWER: Louis **Armstrong** [or “**Satchmo**”]

[10] Louis Armstrong also collaborated with Ella Fitzgerald on a jazz standard called “stompin’ at” this place. Swing dances like the Lindy Hop were developed at this Harlem landmark, which was nicknamed “the home of happy feet.”

ANSWER: the **Savoy** Ballroom