



# ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS  
PACKET BY CHICAGO A

TOSSUPS

1. The terpene ascaridole unusually possesses this functional group in a bridging position, while three bridges containing this functional group link two tertiary amines in HMTD. The smallest compound with this functional group is produced in the anthraquinone process. A Hock rearrangement of this functional group attached to cumene is used to produce phenol and acetone in the cumene process. These compounds are used to oxidize sulfides to sulfoxides or sulfones, and they are produced in autoxidation reactions. Oxidation of ketones to esters via the Baeyer-Villiger reaction and non-stereospecific epoxidation of alkenes are typically catalyzed with a compound containing a hybrid of this functional group and a carboxylic acid. mCPBA contains this functional group, which is characterized by an oxygen-oxygen single bond. For 10 points, name this functional group found in the common disinfectant H<sub>2</sub>O<sub>2</sub>.

ANSWER: peroxides [or hydroperoxides; or peroxyacids; or peroxycarboxylic acids; or hydrogen peroxide]

2. A predecessor to this empire was ruled by the chieftain Heraios, who minted notable coins showing his deliberately deformed head. This state did not rule Sri Lanka, but it did convene a Fourth Buddhist Council that produced the Maha-vibhasha in Kashmir. This empire administered regional power at Mathura and Bagram, and its founder used coinage to link himself to Hermaeus. The Rabatak Inscription describes the greatest king of this polity, a grandson of Kujula Kadphises who built a great stupa in his capital at Peshawar to champion Buddhism. This branch of the Yuezhi was ruled by Kanishka the Great, but after Kidara's revolt, this empire was dissected by the Hephthalites, Guptas, and Sassanids. For 10 points, name this empire in power from the 1st to the 4th century CE, based around the Amu Darya in modern-day Afghanistan.

ANSWER: Kushan Empire [or Kushana]

3. In one letter, this essayist noted that he had little musical training, besides having heard a bit of Beethoven and Weber, but nonetheless glowingly reviewed the title composer's work. This writer attacked the "empty words... we often hear fall" when people dismissed decadent literature in some "New Notes" on a certain author. Another of this writer's essays opens by mocking tourists who walk quickly to the Louvre and "come to a rapturous halt" before a "Titian or a Raphael", and praises the work of "Monsieur G," a Crimean War correspondent named Constantin Guys. This author of "Richard Wagner and Tannhauser in Paris" produced early French translations of Poe and wrote an essay called "The Painter of Modern Life" that includes a description of a "passionate spectator" for whom "the crowd is his element", the *flâneur*. For 10 points, name this French author who included the section *Spleen and Ideal* in his poetry collection *Les Fleurs du mal*.

ANSWER: Charles Baudelaire [or Charles Pierre Baudelaire]

4. A composer from this century names a cadence in which the leading tone goes down to the submediant before resolving up to the tonic. Francesco Landini did all of his composing in this century, in which Marchetto of Padua invented a form of mensural notation that is an Italian alternative to the previous century's invention of Franconian notation. Writing a note in red reduces its rhythmic value by a third in a style from this century, whose practitioners include Johannes Ciconia and a man who wrote a chanson shaped like a heart, Baude Cordier. The *Ars subtilior* movement arose in this century, as did a movement that produced vocal works composed of a melodic scheme called the "color" and a rhythmic scheme called the "talea", and had a name coined by Johannes de Muris. For 10 points, name this century during which isorhythmic motets were written by *Ars nova* composers such as Philippe de Vitry, whose music was admired by his contemporary, Petrarch.

ANSWER: 1300s AD [or 14th century AD; or Trecento]

5. In Cao Dai, the first of the three jewels, *tinb*, which represents matter and the body, is accompanied by the offering of one of these things. Eighteen of these items are carved on the Jewel Promenade platform at Mahabodhi Temple Complex where the Buddha walked. A text named for one of these items is divided into “theoretical teachings,” consisting of the first fourteen chapters—including one on the “Expedient Means”—and the “essential teachings,” which include the “Life Span” chapter. In ancient Rome, hanging these items upside down over a table meant that discussions were private. After a vision at the Hill of Tepeyac, a Mexican peasant had a bunch of these items fall out of his *tilma* when he visited the Archbishop, after which an image of the Virgin of Guadalupe appeared on his cloak. For 10 points, name these plants that include the lotus, lily-of-the-valley, and rose.

ANSWER: flowers [or lotus, rose, or rosa until they are read; prompt on “plants”]

6. Software packages such as CDSSTR, SELCON, and CONTIN can be used to analyze spectra produced by this technique. The Chirascan is a brand of spectrometer used for this technique. Spectrometers for this technique can be calibrated using pantolactone or 10-camphorsulfonic acid as standards. Calculation of data using this technique often involves multiplying delta-epsilon by 3298 to get theta. This technique produces prominent peaks in the far-UV range at 190, 208, and 222 nanometers. Measurements in this technique are often reported in terms of ellipticity. This technique works by measuring a molecule’s difference in absorption between left-handed and right-handed circularly polarized light. For 10 points, name this technique commonly used to analyze the secondary structures of proteins.

ANSWER: circular dichroism [or CD]

7. Traditional love poems in this language were categorized according to five “landscapes”, each named for a particular flower. In one work in this language, the protagonist pretends to circle around her murderous husband three times to worship him, but then shoves him off a hill to his death. In another work in this language, a woman cuts off one of her breasts to cast a curse that burns to the ground the city that put her husband to death on false charges. The oldest collection of religious poems in this language gave rise to a namesake meter called *Paripaatal*, and many works in this language are written in *akaval* meter. A poem about a woman who marries the thief Kaalan and a poem about the anklet of Kannagi are two of this language’s Five Great Epics. For 10 points, the *Kundalakesi* and *Cilappatikaram* were written in what Dravidian language spoken in South India and Sri Lanka?

ANSWER: Tamil [or Tamizh]

8. This artwork was removed from its original location to make way for a set of sculptures by Francesco di Giorgio, leading Giorgio Vasari unable to ascertain its location. Its largest section unusually features the child martyr Crescentius in a red robe kneeling to the Virgin. A pure black-bodied Satan tempts Jesus Christ, who towers over several massive cities in a fragment of this masterpiece that is now housed at the Frick. A portion of this artwork in which Isaiah and Ezekiel flank a Nativity scene featuring sixteen angels can be found in the U.S. National Gallery. Scenes from the childhood of Christ comprise the front predella of this artwork, while the story of the Passion of Christ is told on numerous panels of its back. This painting and the *Rucellai Madonna* are the only two works of their artist that can be dated. For 10 points, name this high altarpiece of the Siena Cathedral, a 1308 masterpiece of Duccio.

ANSWER: Maesta of Duccio

9. A politician resigned this office upon charges that he accepted bribes from Colorado banker Jerome Chaffee, and then became president of Mount Vernon Bank in Ohio. The first holder of this position in Grover Cleveland’s cabinet was the subject of a *Profile in Courage* for eulogizing Charles Sumner in the Senate. Those two men are Lucius Lamar and Columbus Delano, the latter of whom was replaced by Zachariah Chandler. Its first holder was called the “Butcher” because he fired bureaucrats to form this office. In addition to Thomas Ewing, another holder sued San Francisco for violating the Raker Act, appointed John Collier to head a division of the CCC, and was Harold Ickes. Two holders of this office that were scandalized by the Alaska Syndicate and Pan American Petroleum were, respectively, Richard Ballinger and Albert Fall. For 10 points, name this cabinet level position that is responsible for the National Park Service.

ANSWER: Secretary of the Interior [prompt on “Interior”]

10. In this Platonic dialogue, our good friend Socrates compares his surroundings, which are a “fair-resting place” featuring a chorus of cicadas, to a spot sacred to Achelous. Later, Socrates compares his words to the epitaph of Midas’s tomb, whose lines can be read in any order because they do not succeed each other logically. A word that can mean “potion”, “remedy”, or “poison” is the starting point for Jacques Derrida’s reading of this dialogue, titled “Plato’s Pharmacy.” In this dialogue, Socrates uses the image of a charioteer attempting to drive two winged horses of different qualities of stock to represent the soul, which is said to re-grow wings in response to an emotion that was also treated in *The Symposium*. For 10 points, name this Platonic dialogue in which Socrates discusses the art of rhetoric after reading a discourse by Lysias that suggests that those who are not in love make better sexual partners.

ANSWER: Phaedrus

11. This ruler came to power in a coup financed by the ambassador La Chetardie and orchestrated by a man who served as physician to this ruler’s mother, Count Lestocq. That coup marked the downfall of Heinrich Ostermann and Burkhard von Munich, the leaders of the “German Faction.” This ruler removed the tongue of Natalia Lopukhina, as part of a longtime grudge against the Mons family, after a failed intrigue aimed at toppling chancellor Alexey Bestuzhev. This ruler’s army achieved victory at Kunersdorf but then withdrew after this ruler died, in a sequence dubbed the “Miracle of the House of Brandenburg.” This ruler, served by the Shuvalov family, deposed Ivan VI after returning from exile at a nunnery, where she was sent by her father’s niece Anna. For 10 points, name this ruler, raised in a log cabin by her parents, Catherine I and Peter the Great, who was Empress of Russia from 1741 to 1762.

ANSWER: Elizabeth of Russia [or Elizaveta Petrovna; or Yelisavet]

12. An unusual six-sided version of this phenomenon can be found at Saturn’s North Pole. Chevron patterns on Jupiter within these things indicate the presence of gravity inertia waves. This phenomenon oscillates from a northern to a southern position depending on the modes of the PMA. Undulations within these phenomenon are called Rossby waves, and the southern branch of one of these entities is responsible for “pineapple express” events. During a cold winter, the nocturnal types of these phenomena can form, which partly are responsible for ozone depletion in Antarctica. These phenomena are usually found in the troposphere and generally move from east to west; two examples of them are the polar “ones” within the upper air westerlies, and the subtropical, or mid-latitude ones. For 10 points, name these movements of wind that are found in the upper atmosphere.

ANSWER: jet streams [prompt on partial answers; prompt on “vortex” or “cloud pattern” until “inertia” is read]

13. This character repeats the phrase “blue sky, blue eyes” while trying to convince another character to take a chased silver ring. A visit to the town photographer reveals that the picture of the baby in a great gilt frame belongs to this character, who relates a story about a tramp who jumps head-first into a threshing machine. This character also tells the narrator a story about people being thrown from a sledge to the wolves by Peter and Pavel. She returns from Denver after being abandoned by her fiancé Larry Donovan. An episode at the Vannis’ dancing tent causes this character to lose her position with Mrs. Harling, after which she goes to work for the lecherous Wick Cutter. This friend of Lena Lingard eventually marries Anton Cuzak and settles down in Black Hawk. For 10 points, name this title character whose life is chronicled by Jim Burden in a Willa Cather novel.

ANSWER: Antonia Shimerda Cuzak [prompt on “A. Shimerda” or “A. Cuzak”]

14. A thinker with this surname argued that beauty is “power over other people” in *Face Value*. Another academic with this last name re-examined Western philosophy through embodied cognition in *Philosophy in the Flesh*. A social scientist with this surname identified language intonation for added emphasis and “tag questions” to suggest agreement as strategies that ladies employ in *Woman and the Language Place*. A scholar with this last name examined how categories impact the human mind in a book whose title is inspired by the Dyirbal Language. A book written by Mark Johnson and that thinker argued that cognition is determined partially by non-mental factors by examining the statements “Argument is War” and “Ideas are Plants” as they are used by humans. For 10 points, give this surname of linguist George, who wrote *Women, Fire, and Dangerous Things* and *Metaphors We Live By*.

ANSWER: Lakoff [or Robin Lakoff; or George Lakoff; or Rachel Scherr until “embodied cognition” is read]

15. In a suite by this composer, a hexatonic folk tune for English horn plays over pulsing pizzicato strings in the opening of the "Super-Sadness" movement. He included the melodies to "Laredo" and "Git Along Little Dogies" in the "Cowboy Songs" movement of a film score that he wrote for Pare Lorentz. One of his operas concludes with a "Funeral Hymn" beginning with the words "Where is where." This composer, who derived his *Acadian Songs and Dances* from the film score to *Louisiana Story*, wrote the score to *The Plow that Broke the Plains*. In another of his operas, one character describes a Vision of the Holy Ghost with the words "Pigeons on the grass, alas." He served from 1940-1954 as the music critic for the New York Herald Tribune. His collaborations with Gertrude Stein include operas about Teresa of Avila and Susan B. Anthony. For 10 points, name this composer of *The Mother of Us All* and *Four Saints in Three Acts*.

ANSWER: Virgil Thomson

16. One of these animals gave birth to a child that had to be fed an entire cow's milk each day, but was killed when it was shortchanged by greedy milkmaids and began hungrily eyeing the local herd. That one, like his twin Sceolan, came to be one of these creatures when Iollan's mistress jealously turned Uirne into one. Mabon ap Modron is the only person capable of tracking down one of these animals, so Culhwch is forced to find him while hunting for a different animal. Drudwyn is one of these animals, a group of which are accompanied by a cackling old hag named Night-Mallt. An encounter with a white, red-eared group of these animals belonging to Arawn proves troublesome for Pwyll. A *geis* is violated when a hero is offered the meat of this animal by a crone. Setanta received the name "Cuchulainn" after killing, and taking the place of, one of these animals who was responsible for guarding Culann. For 10 points, name these loyal domestic animals.

ANSWER: dogs [or obvious equivalents; do not accept "wolves" or the like]

17. An absurd saga unfolded in this city when a local militia began using the Bat Symbol to mark territory and rebranded itself as "the Justice League." That group's leader, Batman, escaped prison and his daughter, Batgirl, was elected to city council. Areas in this city are menaced by vehicles known as "Big Skulls," a reference to an emblem of crossed pistols-and-dagger worn by the BOPE. A series of tests detecting the beta-lactamase KPC enzyme led to fears that its Guanabara Bay may be teeming with unstoppable "super bacteria." This city had a 2010 security crisis after criminals began torching hundreds of vehicles, and it employed controversial UPPs, or Pacifying Police Units. Located just south of the Imperial City of Petropolis, areas of this city include Rocinha and Botafogo in the South Zone, which includes Copacabana Beach. For 10 points, name this city, home to the world's most famous *favelas*, the site of the upcoming Summer Olympics in Brazil.

ANSWER: Rio de Janeiro

18. A message sent by Gongylus of Eretria was used as evidence for an instance of this specific crime. The Aleuadae family bribed Leotychides to forgive their commission of this crime, which Attaginus openly committed by hosting a banquet for a general who died near the Gargaphia Spring. This crime was encouraged by the networks of Thargelia, a hetaera residing in Thessaly. After being accused of this crime, the regent of Leonidas's son Pleistarchus fled to the Temple of Athena Chalkioikos, where he was starved to death. Rather than face trumped-up charges for this crime, a rival of Aristides fled to Admetus of Molossia. Pausanias was accused of this crime despite defeating Mardonius at Plataea, while the aforementioned rival of Aristides committed it by joining the court of Artaxerxes. For 10 points, name this Athenian political charge that brought down Themistocles, the act of sympathizing with Achaemenids like Xerxes and Darius.

ANSWER: collaborating with the Persians [or Medism; or Medizing; or allying with Medes; or obvious equivalents, such as betraying Greece to the Persians, treason against Greece with the Persians, sympathizing with the Persians; prompt on "treason" or obvious equivalents that do not mention "Persia"]

19. This scientist names a hypothetical dark matter candidate which is the Goldstone boson for the spontaneous breaking of ungauged lepton number symmetry. The search for another hypothetical particle named for this scientist is being performed in experiments utilizing liquid xenon in a time projection chamber and cadmium zinc telluride crystals—those are the EXO and COBRA experiments. This scientist names a representation in which the gamma matrices are all either purely real or purely imaginary, causing the spinors to be purely real. A right-handed spinor is multiplied by its charge conjugate in a mass term named for this scientist appearing in the Lagrangian which explains the seesaw mechanism. The existence of a type of particle named for this scientist would be confirmed by observing neutrinoless double beta decay. Dirac fermions are contrasted with, for 10 points, what scientist's namesake type of fermion, which is its own antiparticle?

ANSWER: Ettore Majorana [or Majorana fermions; or Majorana spinors]

20. A character in this play keeps interrupting a scene to complain that the cook is refusing to stuff the venison with dumplings or serve woodcocks with buttered toast. This play opens with a character being evicted from a tavern, whose tavern keeper and wife have been bribed to turn him out. Another character in this play leaves the name of the groom blank on a letter that commands that his daughter be married by a priest in Gotham, thus allowing her to marry the page of the lord who pretends to be wooing her. The villain in this play is aided by the fat, corrupt justice-of-the-peace Greedy, but betrayed by his sidekick, the lawyer Jack Marall, who aids the schemes of Tom and Lady Allworth. For 10 points, name this play in which Frank Wellborn saves himself from the financial ruin thrust upon him by his uncle, Sir Giles Overreach, a Jacobean comedy by Philip Massinger.

ANSWER: A New Way to Pay Old Debts

TIEBREAKER

21. William Arrowsmith translated a poem from this language addressed to the Hoopoe, for whom “time stops still and February never dies.” A poem in this language describes an “infernal angel pass in flight,” engulfed in an “eerie emptiness” and “festooned with swastikas;” that poem is about “the wounded spring” of Hitler. Another poem in this language is about a creature who “seeks / life there only / where drought and desolation gnaw;” that poem is about a “siren / of the coldest seas” and ends by asking “can you not see / that she is your sister?” An author from this country included “The Eel” in his collection *The Storm and Other Things*. That poet from here wrote the collection *Cuttlefish Bones*. Another author from this country described a gate bearing the inscription “Abandon All Hope Ye Who Abandon Here” in a poem in which he visits Hell. For 10 points, name this home country of Eugenio Montale and Dante Alighieri.

ANSWER: Republic of Italy

## BONUSES

1. This god attempted to appease Mot by impregnating a cow and offering him the resulting abomination. Mot was unimpressed, and instead killed him. For 10 points each:

[10] Identify this Canaanite god who has a palace built for him by Kothar-wa-Khasis in a story that is told in a series of clay tablets found in the 1920s in Ugarit.

ANSWER: Baal [or Hadad; or Baal-Hadad]

[10] After Mot kills Baal, this enraged warrior goddess gets revenge by slicing, dicing, grinding, and otherwise reducing Mot until his ashes are scattered across the earth. She is usually said to be the virgin daughter of El.

ANSWER: Anath

[10] Baal uses his weapons Driver and Chaser, also created for him by Kothar-wa-Khasis, to defeat this sea god who attempts to usurp Baal's heavenly throne.

ANSWER: Yam [or Yaw; or Judge Nahar]

2. This site is home to Wofeng Bridge, where you can try to toss coins at two large brass bells, or rub the bellies of two hidden monkeys on the arches, to bring yourself good luck. For 10 points each:

[10] Name this Quanzhen temple in Beijing founded during the Tang Dynasty as Tianchang Abbey. This place is the home of the Chinese Taoist Association.

ANSWER: White Cloud Temple [or Monastery of the White Clouds; or Baiyun Guan; or Pai-yun kuan]

[10] The White Cloud monastery was initially constructed to enshrine a stone statue of this founder of Taoism, a 6th century BCE sage alleged to have written the Tao te Ching.

ANSWER: Laozi [or Lao-Tzu; or Lao-Tze]

[10] The first Celestial Master Zhang Daoling announced in 142 CE that Laozi wanted him to build a new state of chosen people. He then asked each person who wanted to join his sect to make this donation, which became the designation for his movement.

ANSWER: five pecks of rice [or Wudoumi; prompt on "rice" or more general answers, such as "food"]

3. The von Neumann entropy is non-zero for one of these states. For 10 points each:

[10] Name this type of quantum state which is represented using a density matrix rather than a single ket. This type of state is a collection of single kets with varying probabilities.

ANSWER: mixed state

[10] A density matrix represents a pure state if and only if the density matrix has this property.

ANSWER: idempotent [or word forms, such as idempotency]

[10] Kets are used to represent pure states in the notation system named for this British physicist, who also names a relativistic form of the Schrödinger equation which implies the existence of antimatter.

ANSWER: Paul Dirac

4. This author portrayed Carlos Slim as Max Monroy in a novel narrated by the decapitated head of Josué Nadal, *Destiny and Desire*. For 10 points each:

[10] Name this author who wrote about the title tycoon's recollections of his experiences in the Mexican Revolution in *The Death of Artemio Cruz*.

ANSWER: Carlos Fuentes [or Carlos Fuentes Macias]

[10] This other Mexican author, who wrote a five-volume biography of Pancho Villa, chronicled his own experiences in the Revolution in the book *The Eagle and the Serpent*.

ANSWER: Martín Luis Guzman [or Martín Luis Guzmán Franco]

[10] *The Eagle and the Serpent* is a non-fiction account of events that Guzman had previously fictionalized in a novel titled for this concept "*of the Caudillo*". Ben Okri wrote about the coming-of-age of Jeffia Okwe in his first novel, titled for "*Flowers and*" these things.

ANSWER: shadows [or sombras]

5. Answer the following about scandal and politics under Dwight Eisenhower, for 10 points each.

[10] Initially the head of the Federal Security Agency, this lady became the first female secretary when she was tabbed by Eisenhower to head up the Department of Health, Education and Welfare. She had been a director of the U.S. Women's Army Corps, and an editor of the Houston Post.

ANSWER: Oveta Culp Hobby [or Oveta Culp]

[10] Hobby resigned her post partly due to this incident in 1955, in which the namesake laboratory in California comically exposed children to live poliovirus by vaccinating them. A wave of partially paralyzed children starting with Anne Gottsdanker then sued the pants off the laboratories.

ANSWER: Cutter Incident [or Cutter Laboratories]

[10] Sherman Adams of New Hampshire became the first U.S. politician ever to hold this title under Eisenhower, but he had to resign too when it was revealed that Bernard Goldfine gave him a Vicuña coat. Originally called the Assistant to the President, H.R. Haldeman also resigned this office, under Nixon.

ANSWER: White House Chief of Staff

6. This concept was created in the case of *Winans v. Denmead*, which involved railroad cars of a "cylindrical and conical" shape that had been invented to carry coal. For 10 points each:

[10] Name this concept, under which infringement may be found even if the accused product does not fall within the literal scope of the claims. Courts apply a "function-way-result" test to determine whether it is met.

ANSWER: doctrine of equivalents [or DOE; or equivalents doctrine; or word forms of equivalents, such as equivalence and equivalency; prompt on "equivalents" or "nonliteral infringement"]

[10] The doctrine of equivalents applies to these exclusive rights which are granted to those who make inventions. Claims for these issuances must meet the requirements of non-obviousness, novelty, and usefulness.

ANSWER: patents

[10] In her concurrence in *Warner-Jenkinson*, the principal modern case on the doctrine of equivalents, Justice Ginsburg discussed the court's creation of a rebuttable presumption involving the use of this doctrine. The "collateral" version of this doctrine bars relitigation of issues, similar to *res judicata*.

ANSWER: estoppel [accept prosecution history estoppel or collateral estoppel]

7. A Mozart concerto pairs this instrument with the flute, and Stockhausen's *Freude* is for two of these instruments. For 10 points each:

[10] Name this instrument whose 40 to 47 strings are stretched across a triangular frame with a curved neck. It sometimes represents bards, as in the first movement of Smetana's *Ma Vlast*, due to its resemblance to the lyre.

ANSWER: harp

[10] This contemporary composer played off that bardic tradition in his *Ballad* for harp and strings. He used recorded birdsong in his composition *Cantus Arcticus*.

ANSWER: Einojuhani Rautavaara

[10] This Argentinian composer wrote a well-regarded harp concerto for harpist Nicanor Zabaleta. His other major works include the ballet *Estancia* and the opera *Don Rodrigo*.

ANSWER: Alberto Ginastera [or Alberto Evaristo Ginastera]

8. Answer the following about John Lawrence, for 10 points each.

[10] John Lawrence violated an anti-sodomy law in this state, leading to a namesake 2003 Supreme Court decision that overturned *Bowers v. Hardwick*. An earlier event in this state was investigated by a commission led by Earl Warren.

ANSWER: Texas

[10] John H. Lawrence, the "father of nuclear medicine" and brother of notable physicist Ernest Lawrence, was aboard this ship at the time of its sinking, en route from Glasgow to Montreal in 1939. This was the first British ship sunk by U-boats, and the first ship sunk during World War II.

ANSWER: SS Athenia

[10] Before becoming Lord Mayor of London in 1692, Sir John Lawrence had this old-timey profession. A member of this profession in London relates stories of ancient Japan in Tobias Smollett's *The History and Adventures of an Atom*, and Harry Truman was one of *these* before entering politics.

ANSWER: haberdasher [or haberdashery; prompt on description, such as "seller of men's clothing" or "men's sewing and dressmaking shop" - player must give the term "haberdasher"]

9. This essay declares that "All things being in order, so shall they end, and so shall they begin again; according to ordainer or order and mystical mathematics of the city of heaven". For 10 points each:

[10] Name this 1658 essay by Thomas Browne on God's organization of the world through the quincunx pattern. It was originally paired with Browne's *Hydriotaphia, or Urn-Burial*.

ANSWER: The Garden of Cyrus

[10] The major 18th-century biography of Thomas Browne was written by this author of *Lives of the Most Eminent English Poets*. This man's life was, in turn, chronicled by James Boswell.

ANSWER: Samuel Johnson

[10] One of the namesake poets in Johnson's *Lives* was this Metaphysical poet of *Constantia and Philetus*, who pioneered the English Pindaric ode.

ANSWER: Abraham Cowley ("cooley")

10. The perpetrator of this action was dispatched by Antonio di Rudini, and later capped off his stellar career by telling everyone how great it would be to hand over power to Mussolini. For 10 points each:

[10] Name this 1898 massacre in Milan, where heroic conduct like firing into unarmed crowds and blowing apart monastery walls to get at cowering, crippled beggars earned its namesake general a congratulatory royal telegram.

ANSWER: Fiorenzo Bava-Beccaris [or the Bava-Beccaris Massacre]

[10] The first Italian monarch by this name sent that telegram to Bava-Beccaris, causing Gaetano Bresci to catch a ship back to Italy and shoot him repeatedly. The second Italian monarch of this name was the last king of Italy, ruling after Victor Emmanuel III.

ANSWER: Umberto [or Humbert]

[10] This anarchist magazine started by Emma Goldman in 1906, and edited by Alexander Berkman, helped to raise money for associates of Bresci in the wake of Umberto's assassination, before it was shut down in 1918.

ANSWER: Mother Earth

11. This function cannot be defined for Vitali sets. For 10 points each:

[10] Name this function, which is defined as the infimum of the sum of the lengths of all subsets of a subset of " $\mathbb{R}^n$ ".

ANSWER: Lebesgue measure [or Lebesgue outer measure; or Lebesgue exterior measure; prompt on "measure"]

[10] A simple application of when the Lebesgue measure is more useful than the Riemann measure is making the Dirichlet function integrable. That's because the Lebesgue measure of this set of numbers, often symbolized  $\mathbb{Q}$ , is zero. These numbers are expressible with a fraction, and they do not include  $e$  or  $\pi$ .

ANSWER: the rational numbers

[10] If one wanted to define a non-zero measure to the Cantor set, one can use this measure, which applies to non-decreasing, right continuous functions over half-open intervals. Those half-open intervals allow one to assign a non-zero measure value to a single point.

ANSWER: Lebesgue-Stieltjes measure [do not accept or prompt on "Lebesgue measure"]

12. This architect designed a house with tubed white supports and large windows that bursts from a dense treeline. That house sits on a ridiculously steep slope in Michigan. For 10 points each:

[10] Name this architect whose trademark white exteriors also appear on Frankfurt's Museum of Decorative Arts and the Sandra Day O'Connor Courthouse in Phoenix. He recently completed Tel Aviv's imposing Rothschild Tower.

ANSWER: Richard Meier

[10] Meier is a member of this group of architects, which came to be seen as the major embodiment of modernism after a contentious MOMA meeting and study. It also includes Michael Graves and Peter Eisenman.

ANSWER: The New York Five

[10] When Richard Meier first moved to New York, he worked for Marcel Breuer, who created the famed Wassily Chair while on the faculty of this institution founded by Walter Gropius.

ANSWER: Bauhaus (rhymes with cow house)



13. Answer the following about ostensible European literary plagiarism, for 10 points each.

[10] This author of *Cancer Ward* and *The Gulag Archipelago* was a leading voice in incorrectly accusing Mikhail Sholokhov of having plagiarized *And Quiet Flows the Don*.

ANSWER: Alexander Solzhenitsyn [or Aleksandr Isayevich Solzhenitsyn]

[10] The 1978 book *The Anatomy Lesson* was a savage response to critics who had accused its author, Danilo Kis, of plagiarizing Borges and Joyce in this collection of vignettes about Stalinist Yugoslavia.

ANSWER: A Tomb for Boris Davidovich [or The Tomb of Boris Davidovich; or Grobnica za Borisa Davidoviča]

[10] This Frenchman won a plagiarism case involving his play *L'Oncle Sam* by proving that he had actually plagiarized from things not written by the plaintiffs. He also wrote *La Tosca* and a series of plays for Sarah Bernhardt, including *Fedora*.

ANSWER: Victorien Sardou

14. A linkage between bases in two separate examples of these structures produces a pseudoknot. For 10 points each:

[10] Name this common nucleic acid secondary structure which forms when a molecule of RNA or single-stranded DNA loops around on itself and forms base pairs between bases on the same strand.

ANSWER: hairpin loop [or stem-loop]

[10] In this RNA tertiary structural motif, two anti-parallel RNA strands close together are linked by hydrogen bonds between hydroxyl groups on their sugars.

ANSWER: ribose zipper

[10] RNA can form interesting secondary structures due to its formation of wobble base pairs, which explains why one tRNA can bind to multiple examples of these trinucleotide sequences which correspond to different amino acids.

ANSWER: codons

15. This nation ran out of money while attempting to build a national railroad, only to accidentally watch its second largest city spring up at San Pedro Sula, where work on the tracks was abandoned. For 10 points each:

[10] Identify this Central American nation that inspired O. Henry to coin the term “Banana Republic,” where Jose Manuel Zelaya was ousted in a 2009 coup in Tegucigalpa.

ANSWER: Republic of Honduras

[10] This Honduran won the Battle of La Trinidad and led the Central American Federation from 1830 to 1839, often feuding with Guatemalan conservative Rafael Carrera. He is considered the major icon of a united Central America.

ANSWER: Francisco Morazán

[10] The beloved statue of Morazán in Tegucigalpa may actually be a tarnished sculpture of Michel Ney found by corrupt civic leaders at a local flea market. At least, that's the story told in the book *Open Veins of Latin America*, a 1971 study of imperialism written by this journalist from Uruguay.

ANSWER: Eduardo Hughes Galeano

16. In *Vir Heroicus Sublimis*, this feature is often held to suggest an “upright man” that combats the rest of the red world. For 10 points each:

[10] Name these features, which can be seen in canvases such as *Onement 1*. They consist of a single line that runs through a unified color field and are the length of a canvas.

ANSWER: “zips”

[10] In the 1920's Barnett Newman, the creator of the zips, studied at this esteemed independent school of art in New York City. This *atelier* school's faculty has included Al Hirschfeld and Helen Frankenthaler

ANSWER: Art Students League of New York [prompt on “The League”]

[10] Many commentators have stated that the “zip” in *Vir Heroicus Sublimis* is a standin for this religious figure, who is shown weeping in Masaccio's *The Expulsion*.

ANSWER: Adam

17. In the first section of this work, the unsurprisingly stupid Tom Brainless goes off to college, where he somehow manages to graduate despite doing no work. For 10 points each:

[10] Identify this John Trumbull poem consisting of eight-syllable couplets. In it, Harriet Simper is dumped by Dick Harebrain, leading her to wind up with Brainless.

ANSWER: The **Progress of Dulness**

[10] John Trumbull was a member of this group of writers from Connecticut. Another of its members, Joel Barlow, wrote a mock-heroic poem about early American food called *The Hasty-Pudding*.

ANSWER: the **Hartford Wits** [prompt on "**Connecticut Wits**"]

[10] Trumbull and Barlow were among the Wits who collaborated on this 1787 satirical poem that expressed its writers' dissatisfaction with the Articles of Confederation.

ANSWER: The **Anarchiad**

18. The name of these entities was later applied to the units sent to defeat Rabih az-Zubayr's empire around Lake Chad in 1898. For 10 points each:

[10] Identify these groups which engaged in *noyades*, mass drownings of families bound together and thrown into local rivers, while pacifying supporters of Henri de La Rochejaquelein. Twelve of these units were commanded by Louis-Marie Turreau in the War of the Vendée against bands of peasant Royalists.

ANSWER: **Infernal Columns** [or **Colonnes infernales**]

[10] Perhaps the most notorious set of drownings, sometimes called "Republican marriages," occurred in this French city, which was the namesake of a 1598 decree issued by Henry IV granting freedom to Huguenots.

ANSWER: **Nantes**

[10] A large wave of massacres followed this closing operation of the revolt, which saw Vendéans abandon the siege of Granville, cross the Loire, and lose at Cholet and Savenay. The name of this operation derives from a Breton word meaning "northwest wind."

ANSWER: Virée de **Galerne** [or Expedition of **Galerne**; or Spree of **Galerne**]

19. Answer the following about the chemistry of acid chlorides, for 10 points each:

[10] Acid chlorides can be produced from carboxylic acids via this sulfur-containing reagent, which also converts alcohols to alkyl chlorides.

ANSWER: **thionyl chloride** [or **SOCl<sub>2</sub>**]

[10] An acid chloride is activated by a Lewis acid like aluminum trichloride in one version of this reaction, in which a benzene ring is alkylated or acylated using an electrophilic aromatic substitution.

ANSWER: **Friedel-Crafts** reaction [or **Friedel-Crafts** alkylation or **Friedel-Crafts** acylation]

[10] In the Schotten-Baumann reaction, an acid chloride is converted to one of these compounds using a two-phase system to prevent hydrolysis of the acid chloride by a base. These compounds can be formed in the Ritter reaction.

ANSWER: **amides**

20. This movement claims that sense experience is the principal method by which humans' gain all of their knowledge. For 10 points each:

[10] Name this philosophical stance, whose advocates include David Hume. In opposition to rationalism, this stance rejects the innate concept thesis, which holds that some ideas present in humanity's mind have been present since birth.

ANSWER: **empiricism** [or word forms]

[10] In an extended passage from *A Treatise Concerning Human Nature*, Hume compares the mind to one of these areas, where perceptions "make their appearance; pass, re-pass, glide away, and mingle."

ANSWER: a **theatre** [or **theater**; no other answer is acceptable]

[10] The first book of David Hume's *A Treatise Concerning Human Nature* claims that humanity's ideas of these two concepts are made of indivisible parts, because these concepts are also not infinitely divisible.

ANSWER: **space** and **time** [accept in either order]