



# ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS  
PACKET BY DARTMOUTH

## TOSSUPS

1. This figure asked his parents if they accepted the crimes he committed on their behalf, to which they replied that he was responsible for them as well as his own sins. This figure's veneration is the focus of a Punjab-centered, *dalit*-based sect that identifies the *Yoga Vasistha* as one of its scriptures. While stopping near a stream, this figure was distraught when the male of a pair of mating cranes was killed by an arrow, prompting him to utter a curse against a hunter that became the first *shloka*. After being convinced to renounce his former life as a highwayman by Narada, this figure meditated for so many years that anthills grew around him. After receiving the exiled wife of the killer of Vali in his *ashram*, or hermitage, this figure teaches the boys Kusha and Lava to recite a work by him that recounts Jatayu's attempt to rescue a woman imprisoned on Lanka after she is tricked by a golden deer. For 10 points, name this legendary Sanskrit poet traditionally credited with composing the *Ramayana*.

ANSWER: Valmiki

2. One astronomical mission designed to explicitly study this regime, ROSAT, suggested that Geminga was responsible for the gas in the Local Cavity's activity in this regime. In 2003, a satellite provided strong evidence that magnetars are anomalous slow-rotation pulsars which are optically active in this regime. Paraboloid and hyperboloid surfaces coated with gold and iridium are used to account for the "grazing incidence" when studying this regime. A satellite that provides images of this regime produced the first image of the supernova remnant Cassiopeia A, and the first discovered binary that is luminous in this region of the spectrum was found in Scorpius. Observational telescopes that study this radiation include XMM-NEWTON and NASA's Chandra. For 10 points, name this portion of the EM spectrum that has a higher frequency than UV rays, and lower frequency than gamma rays.

ANSWER: X-ray astronomy

3. One of this dynasty's rulers built a monastery after claiming divine favor for killing 38 heretics when he saw a heavenly light usually identified as Halley's Comet; that ruler's wife sent "Matthew the Armenian" as an envoy to Manuel I of Portugal. Male heirs of this dynasty were confined at a mountain prison until they succeeded to the throne or died, as described by the ambassador Francisco Alvares. According to legend, this dynasty was founded by a man who ate the head of a rooster after it was discarded by a royal cook. In a book describing this dynasty's origins, a woman is given a ring to allow her son to identify himself to the king of Jerusalem. The elder Gondarine branch of this dynasty traced descent from its first ruler Yekuno Amlak, and its symbol was a lion carrying a golden cross in hand. Its emperors, like Dawit and Zara Yaqob, claimed descent from the Queen of Sheba in accordance with the *Kebra Nagast*. For 10 points, name this royal dynasty of Ethiopia whose final ruler was Haile Selassie.

ANSWER: Solomonic dynasty [or House of Solomon]

4. This character has "a talent for seeing the essence of every situation" according to an essay that challenges J. Dover Wilson's "very dull and very shallow" interpretation. This character is "so negative and insignificant that she arouses" "disgust" that "envelops and exceeds her," according to a Carolyn Heilbrun essay. After being accused of "honeying and making love / Over the nasty sty" with "A cutpurse of the empire and the rule," this character begs, "O, speak to me no more; / These words, like daggers, enter into mine ears." She pronounces a man to be "mad as the sea and wind" for crying "A rat! A rat!" and urges another character to "speak to me no more!" during the "closet scene". An eavesdropper is stabbed behind a tapestry in the closet of this character, who is denounced with the phrase, "Frailty, thy name is woman!" For 10 points, name this character whom Freud cast as the object of Hamlet's Oedipal desire.

ANSWER: Queen Gertrude [prompt on "the Queen"]

5. Thomas Crow's *Emulation* discusses why the weeping woman on the far-right of this artwork is modeled on a description of Timanthes' painting of Iphigenia. Eight Doric columns partially covered by a white cloth form a right angle in this painting's center background. On this painting's far right is a nurse, who covers her face with a blue shawl. Many critics divide the dark, masculine left-hand side of this painting from the light, feminine, right-hand side. The inscription "DEA ROMA" appears below the statue of a goddess at the left of this painting's title figure, who sits on a *klismos* and holds a decree ordering an execution for attempting to restore the Tarquinian monarchy. Exhibited the week after the storming of the Bastille, this is, for 10 points, what Jacques-Louis David painting that depicts stretchers bearing the children of a Roman leader?

ANSWER: The **Lictors Bring to Brutus the Bodies of His Sons** [or **Brutus and His Sons**; or The **Lictors Returning to Brutus the Bodies of His Sons** or similar translations involving Lictors + Brutus and his sons; or **Les licteurs rapportent à Brutus les corps de ses fils**]

6. Before major events, members of this culture would lubricate a lid with fruit juice and tree bark then attempt to stick it to a rubbing-board. This culture believed that the liver was a source of supernatural power and that it was transmitted in a patrilineal manner, except in cases of royalty. A monograph on this culture distinguishes between scientific notions, common sense notions, and mystical notions. Contra Lucien Levy-Bruhl, that text argues that this culture's adoption of mystical notions is not necessarily irrational. That book on this culture also uses the example of termites destroying a granary floor to explain this culture's adoption of superstition. Members of this culture engaged in *benge*, a procedure in which a chicken was poisoned to answer a question about the future. For 10 points, name these peoples whose use of witchcraft, oracles, and magic is the subject of a book by E.E. Evans-Pritchard.

ANSWER: **Azande** [or **Zande** peoples]

7. In peptide bonds, one of these phenomena produces a well-characterized signal designated "NV1." The intensity of these phenomena can be increased by d-p mixing or vibronic coupling. CT complexes can undergo LMCT or MLCT examples of these phenomena. In two types of diagrams depicting these phenomena, lines become curved due to the non-crossing rule. In one set of diagrams depicting the energies of these phenomena, both axes are normalized by the Racah parameter. Examples of this kind of process include intersystem crossing, where a difference in spin multiplicity allows this kind of process to occur in a non-radiative fashion. Sandwiching the electric dipole operator between the initial and final state wavefunctions for this process can be used to derive the fact that the azimuthal quantum number must change by plus or minus one, or this process is said to be "forbidden" according to a selection rule. For 10 points, name this process by which a molecule's electrons change energy levels.

ANSWER: molecular electronic **transitions** [or electron **excitation**; or word forms; or light or energy **absorption**; or photon **emission**]

8. An organization advocating this reform was founded by *Pittsburgh Courier* editor Robert L. Vann in 1939. This reform would have been impeded by proposed amendments to the Elston Act introduced by Richard B. Russell. Kenneth Claiborne Royall was forced to resign from his Cabinet post because he wouldn't enforce this reform, which a Clark Clifford memorandum presented as a key aspect of campaign strategy. This reform eliminated the unique status of the *Montford Point*, which had been created as a result of Executive Order 8802. Walter Francis White wrote a draft of the text which implemented this reform, Executive Order 9981, which was opposed by men like Omar Bradley. It was implemented in 1948 as a result of Asa Philip Randolph and others in the March on Washington Movement. For 10 points, name this reform pushed by Harry Truman, which allowed racial minorities to serve equally in the armed forces.

ANSWER: **desegregation** of the United States **military** [or obvious equivalents for either "desegregation", such as "ending racial discrimination", or "military"; or **Executive Order 9981** until it is read; or more specific answers, such as **desegregation of the United States Marine Corps**]

9. After turning down the lead in a stage adaptation of this novel, a character in a different story knocks over a candle at an Italian restaurant because he is angry about being thrown out of his Jewish friend Jules's apartment. That story was written by an author who claimed that this novel creates a "climate of anarchy and [an] unmotivated and un-apprehended disaster," noting the "overwhelming limitation" of the "fearful image" it "[attempts] to redeem... in social terms." The novel-within-a-novel *Fuck* from Percival Everett's *Erasure* parodies both Sapphire's *Push* and this novel. The protagonist of this novel "has accepted a theology that denies him life" according to an essay that traces its lineage from *Uncle Tom's Cabin*. This novel was criticized in "Many Thousands Gone" and "Everybody's Protest Novel," two essays in a James Baldwin collection of "notes" named for it. For 10 points, name this novel in which Mary Dalton is suffocated by Bigger Thomas, a work of Richard Wright.

ANSWER: **Native Son**

10. An illuminated manuscript of a text originally by this writer was produced in 1467 by the monk Donnus Nicolaus Germanus, and is now held in Poland's Zamoyiski Library. The Harleian Collection's Miniscule 3686 is a recreation of a work by this man, which had its first modern Latin translation produced in 1406 by Jacobus Angelus based on a copy obtained by Manuel Chrysoloras. The Vietnamese site Óc Eo is sometimes identified with the location "Kattigara" mentioned by this man, who created a five-book work consisting of a series of justifications and corrections for data on longitudes and latitudes. Earlier work by Marinus of Tyre provided the basis for the *oikumene* described by this man, which ran from the Canary Islands to the middle of China. For 10 points, name this author of the *Tetrabiblos*, as well as the *Cosmographia* or *Geography*, a Greco-Egyptian figure who also wrote about astronomy in his *Almagest*.

ANSWER: Claudius Ptolemy

11. An increase in this quantity can improve the mobility of graphene devices to clean them through "annealing." Free layers are aligned in a stationary state along their hard axis by the "clocking" value of this quantity, whose "switching" magnitude causes the NOT gate of a free layer to reverse from 0 to 1 in a magnetic tunnel junction. Spin-transfer torque is generated by the polarization of this quantity. This quantity is amplified via secondary emission in a photomultiplier tube. The sensitivity of a photodiode can be improved by minimizing the "dark" form of this quantity. This quantity increases exponentially when a reverse-biased diode is subjected to avalanche breakdown. A version of it is equal to epsilon-naught times the time derivative of the electric field and was developed because a certain equation fails when describing circuits with capacitors. For 10 points, name this quantity that is related to the magnetic field around a closed loop by Ampère's Law.

ANSWER: electric current [or I; or current density; or J; or displacement current]

12. In one work, this philosopher suggests that Adam's association with the demon and poet Abaddon is responsible for the origin of clothing. He argued against Christian Damm's proposed orthographic reforms in *New Apology to the Letter H*. He invoked a "muse with a winnowing fan" in a "rhapsody in cabbalistic prose" that defends the Orientalism of the Bible. Another of his works, which is partly titled for the order used to kill Jesus, accuses Moses Mendelssohn of using "the serpent's deception of language" to distinguish eternal and historical truths. In pieces collected in *Crusades of the Philologist*, such as *Aesthetica in Nuce*, this philosopher ridiculed his protégé for writing *Treatise on the Origin of the Languages*. For 10 points, name this author of *Golgotha and Sheblimini!*, and teacher of Johann Gottfried Herder, who Isaiah Berlin argued was the most reactionary member of the "Counter-Enlightenment."

ANSWER: Johann Georg Hamann

13. One poem in this language asks "what will remain after us / will it be lovers' weeping / in a small dirty hotel / when wall-paper dawns" and unfavorably compares "generals of the most recent wars" to Thucydides after the Battle of Amphipolis. The dying speaker of a poem in this language wishes that "this sad heart of mine in leaves of aloe burn! / And give it then to her who's given it to me" while imagining his friends drinking at his funeral. "Those who expected thunder and lightning / Are disappointed" by the end of the world in a poem in this language, which was used to write several poems that personify humanity as "Mr. Cogito". The author of the collections *Three Winters* and *Facing the River* used this language to write a book that discusses *ketman* and profiles Alpha, Beta, Gamma, and Delta, who all give into the Communist state. *The Captive Mind* is a work in, for 10 points, what language of Zbigniew Herbert, Juliusz Słowacki (swo-VAHT-ski) and Czesław Miłosz (tche-swaf mee-wosh)?

ANSWER: Polish [or język polski; or polszczyzna]

14. Paintings of the nativity traditionally include an ox and an ass because of this book's line "the ox knoweth his owner, and the ass his master's crib." The hymn "Beulah Land" comes from this book's declaration that Israel's name will one day be changed to Hephzibah and Beulah. Its fortieth chapter describes how "every valley shall be exalted and every mountain and hill shall be made low" in the process of building a straight highway to God. This book is the source of the idea that Israel should be a "light unto the nations," and its fifty-third chapter inspired the depiction of Christ as the Man of Sorrows. Its narrator begins to prophesy after an angel uses a burning coal to purify his mouth, and predicts that in the "last days," people will beat their swords into plowshares. For 10 points, name this book of the Old Testament whose prophecy of the virgin birth of Immanuel was used as proof of the divinity of Jesus.

ANSWER: Book of Isaiah

15. After a defeat, the leader of an uprising against this ruler supposedly watched a city burn from the Mari forest under his namesake oak tree; that leader was beheaded and cut into four pieces to be displayed on wheels before the pieces were burned. This non-French ruler set up two banks for paper currency, including one designed by Giacomo Quarenghi located at the old Sea Market building, and each bank created 500,000 notes of “assignation” currency to replace the glut of impractical copper money. One hundred wives and daughters of the Greek Infantry Battalion were enlisted to receive this ruler as the “Amazon Company” during a tour of the Tauric provinces. This ruler’s threat to intervene forced the Treaty of Teschen in the War of Bavarian Succession. For 10 points, identify this ruler for whom fake settlements known as “Potemkin Villages” were erected during her 1787 visit to the Crimea that she annexed.

ANSWER: Catherine the Great [or Catherine II of Russia; or Yekaterina Alexeevna; or Sophie von Anhalt-Zerbst]

16. Robert Schumann argued that this symphony had an ordered pattern despite its apparent “formlessness” and presented a diagram contrasting this symphony with the “traditional model” in his longest critical essay. This composition repeatedly quotes from the first movement of its composer’s earlier cantata *Herminie*, while its fourth movement is a reworking of the “March of the Guards” from its composer’s opera *Les Francs Juges*. The end of this symphony’s third movement uses four timpani to depict sudden thunder; that movement earlier has an offstage oboe and a cor anglais play a “ranz des vaches” call exchanged between two shepherds. In this symphony’s final movement, a *col legno* melody depicts rattling bones, while two bassoons and four tubas create a “burlesque parody” of the *Dies Irae*. Inspired by love for Harriet Smithson, this symphony depicts the opium-addled composer seeing himself at a witches’ sabbath. For 10 points, name this orchestral work of Hector Berlioz.

ANSWER: Symphonie Fantastique: Épisode de la vie d’un artiste... en cinq parties [or Fantastical Symphony: An Episode in the Life of an Artist, in Five Parts]

17. In one human microbiome, the onset of this process is characterized by high levels of *Leuconostoc* that are gradually replaced by *Veillonella* in later stages. The tumoricidal albumin-derived protein complex HAMLET promotes apoptosis during the involution that follows the cessation of this process. Cap cells in TEBs can differentiate into a group of cells which produces contractile force during this process called myoepithelial cells. This process canonically involves one paracellular and four transcellular pathways in alveolar cells. Bile salt-stimulated lipase is produced during this process, which initially generates a substance rich in transferrin and secretory IgA to provide passive immunity. This process occurs after parturition in an estrous cycle, and it causes the release of colostrum within the first few days. Micellar casein granules are synthesized during this process, which is stimulated via the “letdown reflex” by oxytocin and prolactin. For 10 points, name this process by which mothers produce nutrition for newborns.

ANSWER: lactation [or breast milk production; or breastfeeding; or suckling; or lactose synthesis; or galactopoiesis; or obvious equivalents of the previous; prompt on “exocytosis” or “secretion”]

18. This leader, whose propaganda styled him as “First Peasant” and “First Worker,” strangely promoted the teaching of folk and highland dialects in elementary schools. This non-German leader’s government used a golden double axe as the symbol of its official youth group and proclaimed the advent of the third version of his country’s civilization. Unusually, his regime was tolerant of Jews, though they were banned from participating in its National Youth Organization, the EON. An October 28th holiday celebrates a rebuke by this man, in which he supposedly said “Okhi,” or “No,” to an order to station troops in his country. His namesake defensive line was breached during the Battle of the Forts, which allowed Wilhelm List to invade from the north. This man’s sudden death in 1941 marked the end of the 4th of August Regime. For 10 points, name this fascist Greek general who governed after a self-coup in 1936.

ANSWER: Ioannis Metaxas

19. In a story, a man who smuggled “merchandise” from this city is shot by his son-in-law, who is killed by bandits as he tries to rape the mistress his father-in-law picked up in one of this city’s department stores. A character plans to return to this city after he is unable to eat a can of Spam while sitting next to the corpse of a pilot. After killing a man in this city, a character describes feeling pride at “not being a woman” to a drug-addicted retired sociology professor in a novel whose sections are prefaced by times like “half past eleven at night.” A boy watches the bombing of the H.M.S. *Peterel* while in this city, near which that boy helps distribute food with Mr. Macted and is cared for by Dr. Ransome. The American soldiers Frank and Basie are marched to a camp with Jim after he is separated from his parents in this city, where Ch’en assassinates Tang Yen Ta at the beginning of a novel detailing a communist insurrection led by Kyo Gisors. For 10 points, name this setting of *Man’s Fate*, a city that is occupied by Japan in *Empire of the Sun*.

ANSWER: Shanghai [the leadin is from Mao Dun’s “Epitome”]

20. This place was characterized as a “vicious cabal of warring factions” by the author of *God with Revolver*. In an unreleased film set here, Rene Ricard gives orchids to a bulimic socialite as they both imitate an Obetrol addict. Another film of this “cold, frightening, forbidding place” is dominated by DeVeren Bookwalter’s changing facial expressions. A sex club called The Toilet inspired “ghost pissers” like Victor Hugo to come here and urinate to produce “oxidation paintings.” An assassination attempt at this place was perpetrated by an author who believed that all males should be exterminated in the S.C.U.M manifesto. Paul America, Ultra Violet and Edie Sedgwick worked at this place and were three of its owner’s “superstars.” The films *Couch* and *Blow Job* were created in this place, where its owner made silkscreen prints of Mao Zedong and Marilyn Monroe. For 10 points, name this studio of Andy Warhol.

ANSWER: The Factory [prompt on “Andy Warhol’s studio” or obvious equivalents, such as “Warhol’s workshop”]

TIEBREAKER

21. According to studies of this language family’s kinship terms by Jeff Marck, speakers of its ancestral language were matrilineal. “Middle” verbs of intermediate transitivity are a hallmark of this language family, which has been ascribed an “accusative-to-ergative drift” based on Kenneth Hale’s study of its unusual use of suffix morphemes that convert verbs into a passive form. In many of these languages, the ancestral \*k has weakened to a glottal stop represented by the ‘okina. Mitochondrial DNA studies on the origin of this language family’s speakers cast doubt on the “Express Train” model in favor of the “Slow Boat.” Similar terms for *tapa* cloth and the entheogen *kava* are common in this family, whose Nuclear languages diverged from the Tongic branch, the source of the English loanword “taboo.” For 10 points, name this relative of Fijian, a language family that includes Māori, Samoan, and Hawaiian.

ANSWER: Polynesian languages [prompt on “Austronesian”, “Malayo-Pacific”, “Oceanic”, or “Central Pacific”]

## BONUSES

1. In *The Isolated State*, this thinker argued that vocational rent decreases with increased distance to markets. For 10 points each:  
[10] Name this economic geographer who posited a model in which four “rings of agriculture” surround a city. A different type of agriculture would be practiced in each ring due to the cost needed to transport goods.

ANSWER: Johann Heinrich von Thünen

[10] The outermost of von Thünen rings is dominated by this agricultural industry. The overgrazing caused by this industry is the subject of a William Lloyd pamphlet, which in turn inspired Garret Hardin’s paper “The Tragedy of the Commons.”

ANSWER: cattle industry [or livestock; or ranching; or obvious equivalents]

[10] This other theory of economic geography was developed in *Dynamics of Global Crisis* and proposes that the richer “core” countries exploit the outer periphery.

ANSWER: world systems theory [or dependency theory]

2. This politician was dubbed “the Lion of White Hall” in reference to his family home in Kentucky, where he founded the abolitionist newspaper *True American* in Lexington in 1845. For 10 points each:

[10] Name this Kentucky planter who was named Minister to Russia by Abraham Lincoln at the very start of the Civil War, in which role he drummed up Russian support for the Union.

ANSWER: Cassius Marcellus Clay

[10] Upon his recall, Clay was replaced as Minister to Russia by this politician from Pennsylvania, who had been serving as Lincoln’s first Secretary of War before being replaced by his assistant Edwin Stanton. This man’s son James was also a War Secretary for Ulysses Grant.

ANSWER: Simon Cameron

[10] Cassius Clay always carried one of these weapons with him, which he used to kill Cyrus Turner. This blade was infamously used at the Vidalia Sandbar Fight by its namesake, a frontiersman who died at the Battle of the Alamo.

ANSWER: Bowie knife

3. If literature is any guide, the Canadian immigrant experience is pretty bleak. For 10 points each:

[10] A detective of this ethnicity stars in Rick Shiomi’s Noir-inspired play *Yellow Fever*. Naomi reads her Aunt Emily’s journals recounting the trauma of Canadian internment of people of this ethnicity in Joy Kogawa’s *Obasan*.

ANSWER: Japanese-Canadians [or Nikkei Kanadajin; or Nippo-Canadiens; or Issei; or Nissei; or Sansei; or Yosei; or Gosei]

[10] The half-Tamil, half-Sinhalese man Shivan abandons his partner Michael in Vancouver to take care of his rent-controlling grandmother back in Sri Lanka in *The Hungry Ghosts*, a novel by this Sri Lankan-Canadian author of *Funny Boy*.

ANSWER: Shyam Selvadurai

[10] A depressed immigrant from this country moves to rural Alberta with his arsonist twin daughters in *The Second Life of Samuel Tyne*. *Our Sister Killjoy* author Ama Ata Aidoo and *The Beautiful Ones are Not Yet Born* author Ayi Kwei Armah are both from this African country.

ANSWER: Republic of Ghana

4. Industrial production of MSG relies on the *glutamicum* species of this bacteria, which clusters in characteristic “Chinese letters.” For 10 points each:

[10] Name this genus of Gram-positive, catalase-positive rod-shaped bacterium, whose major pathogenic species is distinguished by its clubbed ends and ability to reduce nitrate. This bacteria’s *minutissimum* species fluoresces coral-red under a Wood’s lamp.

ANSWER: Corynebacterium

[10] Fermentation of soy to produce miso and MSG-filled soy sauce is done using the *oryzae* species of this genus of fungi. The *parasiticus* and *flavus* species of this genus produce aflatoxins.

ANSWER: Aspergillus

[10] A type of edible seaweed called nori is produced from organisms in this eukaryotic phylum, whose namesake color comes from the pigment phycoerythrin.

ANSWER: rhodophyta [or red algae]

5. Paul Churchland promoted this position in his book *Neurophilosophy*. For 10 points each:

[10] Identify this position, which asserts that common-sense “folk psychology” does not provide an adequate understanding of the mind and that concepts like “feeling” and “belief” lack biological basis.

ANSWER: **eliminative materialism** [or **eliminativism**]

[10] Contra Paul Churchland, this philosopher argued that folk psychology is valid because it is accurate in helping predict human behavior. That argument, and ones about propositional attitudes, appear in his book *Psychosemantics*.

ANSWER: Jerry **Fodor** [or Jerry Alan **Fodor**]

[10] In *The Language of Thought*, Jerry Fodor argued that the “original sin” of the Wittgensteinian tradition was confusing mentalism and this Cartesian position, which argues that the mind and body are not of the same substance.

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

6. This man’s reputation as a music critic declined after he criticized jazz in books like *Perennial Fashion-Jazz*, which fellow Marxist Eric Hobsbawm called “some of the stupidest pages ever written about jazz.” For 10 points each:

[10] Identify this critical theorist and student of Alban Berg who contrasted the music of Igor Stravinsky and the Schoenberg-led Second Viennese school in *Philosophy of Modern Music*.

ANSWER: Theodor Wiesengrund **Adorno** [or Theodor Ludwig **Wiesengrund**]

[10] Like Berg, Adorno was thoroughly enamored with this technique developed by Arnold Schoenberg, which seeks to use all of the notes in the scale with equal frequency to avoid emphasizing any single one.

ANSWER: **twelve-tone** system [or **dodecaphony**; or obvious equivalents in place of “system”, such as “technique” and “composition”]

[10] This other composer developed his own twelve-tone technique and used it in his piece *Nomos*, considered the first twelve-tone composition. He based many compositions, such as his *Zwölf-tonspiele*, or “Twelve-Tone Games,” on 44 musical “tropes” or “tone-constellations” that he identified in 1921.

ANSWER: Josef Matthias **Hauer**

7. As the ever-energetic Philip II of Spain, you’re desperately trying to manage the finances of your vast empire. For 10 points each:

[10] You introduce the Cruzada tax to fund ventures like this 1571 battle, a naval defeat for the Ottoman Empire with the assistance of Andrea Doria and the Holy League.

ANSWER: Battle of **Lepanto**

[10] You also introduce the *excusado* tax so that part of the *diezmo* gets redirected to your royal coffers. The *diezmo* was the Spanish term for this obligation, which was abolished by Isabella II.

ANSWER: obligatory **tithes** [or taking **one tenth** of income, which is the literal meaning of diezmo]

[10] Since you’re so busy, you fail to deal with discrimination against Aragonese traders in this Castilian town, known for its major wool fairs. Spain negotiated a reduced tariff with England and the marriage of Arthur Tudor to Catherine of Aragon in a 1489 treaty named for this town.

ANSWER: **Medina del Campo** [or Treaty of **Medina del Campo**]

8. This character tells a story about a philosopher who is forced to walk a quadrillion kilometers in the dark after expressing disbelief in the future life after his own death. For 10 points each:

[10] Identify this character who claims that he was “predestined to deny” and tells inane stories, including one about a man losing his nose to a disease, in a hallucination experienced by Ivan near the end of *The Brothers Karamazov*.

ANSWER: the **Devil** [or obvious equivalents, such as **Satan** or **Lucifer**]

[10] Ivan is particularly disgusted by the devil’s banality, suggesting that the latter embodies this complicated Russian concept that roughly translates as “petty evil” or “self-satisfied inferiority”. Fyodor Sologub’s *The Petty Demon* is a well-known treatment of this subject.

ANSWER: **poshlost’** [or **poshlust**]

[10] Perhaps the most famous early leader of the literary war on *poshlost’* was this Ukrainian-born Russian author of *Dead Souls*.

ANSWER: Nikolai **Gogol** [or Nikolai Vasilievich **Gogol**]

9. This operation between  $f$  of  $t$  and  $g$  of  $t$  equals the integral from minus infinity to plus infinity of  $f$  of  $\tau$ , times  $g$  of  $t$  minus  $\tau$ , with respect to  $d\tau$ . For 10 points each:

[10] Name this operation represented by a star between two functions, such as  $f \star g$ .

ANSWER: **convolution**

[10] This operation is equivalent to the convolution of a function with its conjugated time-reversed self. The Wiener-Khinchin theorem states that the power spectrum of a wide-sense-stationary process is equal to the Fourier transform of this operation on the process.

ANSWER: **autocorrelation** function

[10] The output of linear, time-invariant systems is defined as the convolution of the input and impulse response. LTI systems possess this important property when the impulse response is zero for all  $t$  less than zero.

ANSWER: **causal** [or word forms, such as **causality**]

10. The *sunna* of this number is named for the prophet Yusuf, or Joseph, which is convenient because Joseph had this many brothers, all jealous of his pimp multicolor coat. For 10 points each:

[10] Identify this number, also the number of Imams venerated by the largest branch of Shi'a Islam, as contrasted with Seveners.

ANSWER: **twelve** [or **Twelvers**; or **ithna 'ashara**; or **Ithna 'Ashariyya**]

[10] This branch of Twelvers draws their teachings from Muhammad ibn Nusayr an-Namiri and was established circa 950 CE by the Hamdanid Dynasty. This Shiite sect has now become dominant in Syria, especially in the Latakia region, and was practiced by Hafez al-Assad.

ANSWER: **Alawites** [or **Alawis**; or **Ansari**]

[10] According to Twelvers, this period began when the Hidden Imam refused to appoint any further deputies after al-Samarri, and is still going on to this day.

ANSWER: The **Major Occultation** [or **Ghaybat al-Kubra**; prompt on "**Occultation**"]

11. It opens with a depiction of the *Death of Adam* and culminates in a large fresco showing Heraclius fighting Khosrau. For 10 points each:

[10] Identify this cycle, found in the Basilica of San Francesco in Arezzo, which shows the making, use, loss, and recovery of the title religious relic.

ANSWER: The **Legend of the True Cross** [or The **History of the True Cross**]

[10] This fresco from *The Legend of the True Cross* depicts four men, three of whom are soldiers guarding the title figure in his red-coned, yellow tent. This painting is impressive for its depiction of a backlit angel descending from the upper left.

ANSWER: The **Dream of Constantine** [or The **Vision of Constantine**]

[10] *The Legend of the True Cross* is the masterpiece of this 15th century Italian painter, who also created *The Flagellation*.

ANSWER: **Piero** della Francesca [prompt on "della **Francesca**"]

12. Members of this faction were forced out of the Justicialist Party in 1974. For 10 points each:

[10] Identify this faction of left-wing supporters of Juan Perón, whose members kidnapped and murdered the general Pedro Eugenio Aramburu and the right-leaning José Ignacio Rucci.

ANSWER: **Montoneros** [or **Movimiento Peronista Montonero**; or **MPM**]

[10] Minister of Social Welfare José López Rega, sometimes called *El Brujo* or "The Sorcerer," organized the right-wing Peronist snipers who shot several Montoneros during this 1973 massacre. After this event, the Montoneros and the FAR went underground to wage guerilla warfare against the Peronists.

ANSWER: **Ezeiza** massacre

[10] The Ezeiza massacre led to the formation of the AAA, or Argentine Anticommunist Alliance, and kicked off this period of terrorism in Argentina. Also known as the Process of National Reorganization, it witnessed various awful events like the Night of the Pencils.

ANSWER: **Dirty War** [or **Guerra Sucia**]



13. The simplest molecule of this type was a popular artificial butter flavoring until it was implicated as a cause of obliterative bronchiolitis, dubbed “popcorn lung.” For 10 points each:

[10] Name these molecules whose tautomerization is strongly favored by the repulsion between two adjacent dipoles. Oxidation of vicinal diols usually results in cleavage INSTEAD OF these molecules, which undergo the benzilic acid rearrangement.

ANSWER: alpha-diketones [or 1,2-diketones; or vicinal diketones; prompt on “ketones” or “carbonyls”]

[10] Alpha-diketones can be synthesized by reacting alkynes with iodine-containing analogues of this radical initiator. This reagent provides small concentrations of bromine for halohydrin formation and allylic bromination.

ANSWER: NBS [or N-bromosuccinimide; prompt on “bromosuccinimide”]

[10] According to the Goldfinger mechanism, NBS does not generate radicals directly but first forms elemental bromine. Elemental bromine has this feature, as do hydrogen, oxygen, and all the other elements in the acronym HONCIBrIF (hon-cull-briff).

ANSWER: it is a homonuclear diatomic molecule under standard conditions

14. Answer the following about antebellum American theater, for 10 points each.

[10] Royall Tyler’s *The Contrast* was one of the first plays to introduce a stock character of this name, representing the stereotypical New England Yankee. A phrase attributed to George Washington says that “We must consult” this figure.

ANSWER: Brother Jonathan

[10] The Louisiana plantation of Terrebonne was the setting for this Irish-American playwright’s extremely popular melodrama, *The Octoroon*. His other popular plays included *The Shaughraun* and *The Colleen Bawn*.

ANSWER: Dion Boucicault [or Dionysius Lardner Boursicault]

[10] Boucicault’s *The Octoroon* was second in popularity among pre-war melodramas to stage adaptations of this novel by Harriet Beecher Stowe, many of which were just thinly-veiled blackface minstrel shows.

ANSWER: Uncle Tom’s Cabin

15. Neopagans frequently regard carvings at Uffington as symbols of this goddess. For 10 points each:

[10] Identify this Gallo-Roman fertility goddess, the only deity of Celtic origin to be given a feast day by the Romans, which is held on December 18th. Her cult was especially popular among soldiers stationed on the Danubian frontier.

ANSWER: Epona

[10] To highlight her role in fecundity, Epona was depicted carrying this object, a source of abundant nourishment. In Greek mythology, this object was broken off of either the goat Amalthea or the river god Achelous.

ANSWER: cornucopia [or cornucopiae; or horn of plenty]

[10] Unlike his Greek counterpart, this Roman god was depicted carrying the cornucopia instead of a drinking horn. A namesake “Gate” in Hierapolis was dedicated to this god, whose worship displaced that of the earlier Dis Pater.

ANSWER: Pluto [or Plouton; or Plutus; do not accept or prompt on “Hades”]

16. The Battle of Raphia during these wars was a crushing defeat near Gaza for Antiochus III at the hands of Ptolemy IV. For 10 points each:

[10] Name this series of six conflicts between the Ptolemaic and Seleucid kingdoms which were fought between 274 BC and 168 BC.

ANSWER: Syrian Wars [do not accept “Roman-Syrian War(s)”]

[10] This Battle of Kos during the Syrian Wars may have been commemorated by this headless statue at the Louvre which depicts the goddess Nike.

ANSWER: Winged Victory of Samothrace [or Nike of Samothrace]

[10] The Syrian Wars marked the first use of this type of armored heavy cavalry by a Hellenic power, which is named for a Greek term meaning “fully enclosed.” Its origins can be traced to the time of Tiglath-Pileser III, and it was used as the heavy armor component of the Asvaran units in Sassanid Persia.

ANSWER: cataphracts [or kataphraktoi]

17. This quantity is plotted on the y-axis of a Bragg curve. For 10 points each:

[10] Name this quantity, which reaches a minimum when the product of relativistic beta and the Lorentz factor equals 3 in the Bethe-Bloch formula.

ANSWER: kinetic **energy loss** of a charged particle [or **stopping power**, do NOT accept or prompt on “stopping potential,” do NOT READ ALOUD, but accept “ionization **energy loss**” or other correct answers using the word ionization]

[10] The energy loss of a charged particle travelling through a medium occurs due to the charged particle inducing this phenomenon in the medium. This phenomenon is the inverse of recombination, and the degree to which this process occurs in a plasma is given by the Saha equation.

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

[10] In this other method by which charged particles lose energy, the particle decelerates due to electrical interactions with another charged particle, typically producing X-rays in the process.

ANSWER: **bremstrahlung** [or **braking radiation**]

18. This experiment, first conducted with Ebbe Ebersson in 1970, found that very young children who were able to delay immediate gratification for larger future rewards tended to fare better over the course of their lives. For 10 points each:

[10] Name this experiment repeatedly conducted by Walter Mischel, who instructed children that they would receive double the namesake reward if they were able to wait fifteen minutes.

ANSWER: **marshmallow** test [or **marshmallow** experiment]

[10] The notion of personality shaped through social learning, and realizations of reward and punishment in situations, is often traced to this behaviorist author of *Walden Two*, who loved to place rats and pigeons in his operant conditioning boxes.

ANSWER: B.F. **Skinner** [or Burrhus Frederic **Skinner**]

[10] The first major theory of social learning, developed by this man in his 1954 book *Social Learning and Clinical Psychology*, claims that behavior is determined by two types of expectancy - expected outcome and the value placed on that outcome, which is part of his concept of the “locus of control.”

ANSWER: Julian **Rotter**

19. Answer some questions about controversies involving opera composers, for 10 points each.

[10] A simulcast of this composer’s *The Death of Klinghoffer* was recently cancelled amidst mass protests at the Metropolitan. His other operas include *Nixon in China* and *Dr. Atomic*.

ANSWER: John Coolidge **Adams**

[10] The San Francisco Opera premiered this composer’s *Dolores Claiborne*, which contains a scene where the title character is molested on stage. In 2005, he composed an opera based on *An American Tragedy*.

ANSWER: Tobias **Picker**

[10] As riots broke out when his oratorio *The Raft of the Medusa* premiered, this composer led a chant of “Ho, Ho, Ho Chi Minh!” His other works include the one-act opera *The Bassarids*.

ANSWER: Hans Werner **Henze**

20. This author’s poem “Betrayal” describes “One with a foolish lovely face, / who stands with scattered moon-struck air” before revealing that she is “Beauty,” killed by “unpitying time.” For 10 points each:

[10] Name this author from the Orkney Islands, who contributed “Prometheus” to Faber’s *Ariel Poems* series. This author essentially introduced Kafka to the Anglophone world by translating his major works with his wife Willa.

ANSWER: Edwin **Muir**

[10] The speaker of one of Edwin Muir’s poems stands with “one foot” in this place. “Our lingering parents” took “their solitary way” after being led out of this place through “the eastern gate” at the end of a 17th-century poem.

ANSWER: the Garden of **Eden** [the other poem is *Paradise Lost*]

[10] The speaker claims, “I am no trichomaniac / And no foot-fetichist” in “The Quiet Glades of Eden,” one of the many love poems written by this author. He traced the influence of Celtic myth in poetry in *The White Goddess*.

ANSWER: Robert **Graves** [or Robert von Ranke **Graves**]