

## Chicago Open 2016: "An Insatiable Kingpin of International Meme-Laundering"

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### Tossups

1. In this novel, a Jewish surgeon is miraculously cured of myopia while fighting with an anti-Semitic captain in a duel that will kill them both. This novel's protagonist shares a glass of raspberry juice with a sergeant, after the sergeant returns the love letters the protagonist wrote to the sergeant's wife, who died in childbirth as the result of their affair. Later that protagonist is sent to the Russian border and falls under the sway of the cynical Polish landowner Count Chojnicki, who claims that ethnic minorities brought about the nationalism that will spell the (\*) empire's demise in World War I. This novel's sequel, *The Emperor's Tomb*, continues the story to the Anschluss, and it begins with the Slovenian peasant Joseph saving Emperor Franz Josef from snipers at the battle of Solferino. Concerning several generations of the Trotta family, for 10 points, name this novel by Joseph Roth, named after a nationalistic piece of music.

ANSWER: Radetzky March [or Radetzky Marsch]

2. This man has promised to open negotiations in Oslo with Joma Sison and other exiled communists from his country to let them return home. This world leader was a negotiator during a 1989 incident in which the Wild Boys prison gang held members of Joyful Assembly of God hostage; he recently said that he wished Jacqueline Hamill hadn't been killed in that incident because he wanted to rape her first. This man promised to donate money to a local hospital whenever he swore in public after traffic jams during a papal visit led him to call Pope (\*) Francis a "son of a bitch." In a municipal position, this man gave cabinet offices to members of the Lumad minority and to Muslims, and paid ad-hoc civilian death squads to kill drug dealers, earning this man of Visayan descent the nickname "The Punisher." For 10 points, what former mayor of Davao City won a 2016 election to succeed Noynoy Aquino as president of the Philippines?

ANSWER: Rodrigo "Rody" Duterte [prompt on Digong, his nickname]

3. In a potentially fake letter provided by Nepos, a person with this name asks a relative "when will our family stop behaving insanely?" Plutarch writes how a man died to save a person with this name by deliberately killing a male, not a female, snake. Plutarch also claimed that the funeral for another person with this name was the first major occurrence of a eulogy given for a *young* woman. Due to Roman Republic naming conventions, the daughters of Scipio Africanus had this name, including the mother of Scipio Aemilianus' wife and possible killer, (\*) Sempronia. As dictator, Sulla ordered that a future military hero divorce a woman with this name, the daughter of Sulla's rival Cinna. The most famous woman with this name was used by antebellum Americans as an example of the ideal republican mother because of her devotion to her two reform-minded tribune sons. For 10 points, what was the name of Julius Caesar's first wife and the mother of the Gracchus brothers?

ANSWER: Cornelia [or Cornelia Scipionis Africana; or Cornelia Cinna Minor]

4. This operation, applied to the quantity "negative 1 to the fermion number times the negative exponential of beta H," generates a function which is equal to zero if supersymmetry is spontaneously broken, the Witten Index. This operation applied to the product of an entanglement witness and entangled state is always negative. The simplest conditions to solve for a gravitational wave involve a metric disturbance under a gauge that is transverse and has a (\*) zero value for this operation. The expectation value of an operator in a state represented by a density matrix is equal to this operation on the density matrix times the operator. Contracting a rank-2 mixed tensor is equivalent to performing this operation, as exemplified by performing it on the Ricci tensor to obtain the Ricci scalar. For 10 points, name this operation which equals the sum of the diagonal elements of a matrix.

ANSWER: trace

5. A promise to “drink our fill of the milk of the white goat” is made in this composer’s setting of a poem beginning, “Come with me, under my coat.” His earliest published choral work uses sinuous chromatic lines to set Sigebert of Gembloux’s poetry for women’s chorus. While directing the Madrigal Chorus at the Curtis Institute, he wrote Gaelic-inspired madrigals titled *Reincarnations*. Like Morten Lauridsen, this composer of *The Virgin Martyrs* repeated the title after the line “of shadows on the stars” in his setting of (\*) “Sure on this Shining Night.” Eleanor Steber premiered the solo part of his work for soprano and orchestra, which begins with the words “It has become that time of the evening / When people sit on their porches.” That work sets a prose poem that later formed the opening of James Agee’s *A Death in the Family*. For 10 points, name this American composer of *Knoxville: Summer of 1915*.

ANSWER: Samuel (Osborne) Barber II

6. Locations described in this poem include “dome, pyramid, and pinnacle, / A city of death” to which an eagle brings “some hunter’s bone,” tracked by a wolf. In its fifth and final section, this poem’s speaker ponders the result “if to the human mind’s imaginings / Silence and solitude were vacancy.” This poem, first published in its author’s *History of a Six Weeks’ Tour*, precedes its author’s “Ode to Liberty” in referring to the earth as “daedal.” “Gleams of a remoter world” inhabit the dreams of this poem’s speaker, who searches for the (\*) witch of Poesy in the “many-voiced,” “dizzy” Ravine of Arve. This poem begins by noting the flow of “[t]he everlasting universe of things” through the mind, as triggered by the “still, snowy, and serene” title location, “piercing the infinite sky.” For 10 points, name this set of “Lines Written in the Vale of Chamouni,” a Percy Shelley poem about a European landmark.

ANSWER: Mont Blanc: *Lines Written in the Vale of Chamouni*

7. The portrait of Rubens Peale with a Geranium was inspired by this artist's painting *Smell* from his series on the Five Senses. A crystal ball hangs above a surgeon treating a peasant’s foot wound in several paintings by this artist, whose many village genre paintings were reproduced in namesake tapestries by the Beauvais factory. This artist depicted anthropomorphic animals in comic works like *The Monkey Sculptor* and *The Monkey Painter*. He made over 350 paintings of (\*) alchemists, as well as a version of *Mad Meg* based on the painting by his grandfather-in-law Brueghel the Elder. His patron points at one of 49 paintings visible in *The Archduke Leopold Wilhelm in his Picture Gallery in Brussels*. 244 paintings in Leopold Wilhelm’s collection were engraved in this artist’s groundbreaking *Theatrum Pictorium*. For 10 points, name this Flemish baroque painter whose father, son and grandson were also painters.

ANSWER: David Teniers the Younger [or David Teniers II]

8. *Descriptive answer acceptable.* This protein’s unusual catalytic domain is an antiparallel beta sheet surrounded by three alpha helices that binds the dinucleotide inhibitor ApUp. This protein is fused to IL-2 in the chemotherapeutic drug Ontak. It targets a noncanonical histidine residue substituted by a quaternary ammonium amide. Cross-reacting material 197, derived from this protein, is a vaccine scaffold that binds heparin receptors. This protein’s gene, the first moron discovered, is only transcribed under iron starvation in cells lysogenized by the beta (\*) phage. It catalyzes the transfer of ribosylated ADP from NAD+ to elongation factor 2. This protein is injected in the Schick test. Emil von Behring won the first Nobel Prize in Physiology for discovering this protein, which inhibits translation. It makes up 5% of the cell weight of its disease-causing *Corynebacterium*. For 10 points, name this toxin included in a vaccine with toxoids for pertussis and tetanus.

ANSWER: diphtheria toxin [or diphtheria exotoxin; or diphtheria toxoid; anything mentioning diphtheria is fine]

9. A dramatic refusal made by this character is sung out via a *shalsholet* cantillation on the word *vayma'ain*, in parshat Vayeshev. Some observant Jews recognize this man's birthday on the 1st of Tammuz. While being blessed, this man is compared to a "strong bow" and a "fruitful vine near a spring." Just before a *sura* called "The Thunder," this man's story is told start to end by Sura 12 of the *Qur'an*, which, unusually, was revealed in one sitting. A Lithuanian Jew named after this figure wrote the *Beis Halevi* and began the Soloveitchik dynasty of rabbis; another (\*) Soloveitchik of this same given name moved from Boston to run Yeshiva University in 1941. Islamic tradition gave the name Zuleika to a woman who tried to seduce this man, whom the Bible just calls "Potiphar's wife". This father of Ephraim and Manasseh has a talent for interpreting dreams. For 10 points, name this favorite son of the biblical patriarch Jacob.

ANSWER: Joseph [or Yosef; or Yusuf]

10. For plotting to overthrow this man, the explorer Alessandro Malaspina was stripped of his rank and imprisoned. This non-monarch commissioned the Balmis Expedition to travel the world and vaccinate people against smallpox. While commanding troops near Elvas, he sent a gift of fruit to the queen, thus giving the name “War of the Oranges” to that conflict. This man was going to be named Prince of the Algarves, but was imprisoned after the mutiny at Aranjuez sparked by, among other things, his suspected affair with (\*) Maria Luisa of Parma. His negotiations of the Treaty of Basel and the Second Treaty of San Ildefonso to end the War of the Pyrenees with France earned him the nickname “prince of peace.” This man's mistress Pepita Tudó was probably the model for Goya's *Maja* paintings. For 10 points, name this prime minister of Charles IV who governed Spain during the Napoleonic Wars.

ANSWER: Manuel de Godoy Álvarez de Faria Ríos Sánchez Zarzosa

11. Newer versions of these devices utilize superconducting materials operated at or near their critical temperature which are known as Transition Edge Sensors. The first one, which operated as two platinum branches of a Wheatstone bridge, was read out by a galvanometer. A technique called “jiggle-mapping” was used to create images on SCUBA, a detector which used these instruments. A principal difference between the current SPT-pol and the upgraded SPT-3G is the tenfold increase in the number of these devices. The surface of these devices, which often appears in a (\*) spider web shape, is a thermal absorber, that is then connected to a heat reservoir by a thermally resistant link. For 10 points, name these detectors fundamental to radio astronomy, whose name suggests that they detect all wavelengths of light, like a certain magnitude scale.

ANSWER: bolometers [prompt on radio astronomy detector or similar; prompt on particle detector before “wavelengths; DO NOT accept or prompt on antenna or heterodyne detector]

12. In one novel in this language, a family throws lavish parties every night on their farm, including a Witch’s Sabbath during which a woman swings around a black cat by the tail while riding a buck. In another novel in this language, a parson gathers the clothes of fallen soldiers, treating each as one piece of silver to count against Judas’ thirty pieces. One poet of “cocktail-quatrains” in this language wrote a cabaret titled “Life is a hotel on the border,” *The Last Sunday* by Elsa Joubert is written in this language, also used by (\*) Hennie Aucamp. The Silberstein farm is the setting for a trilogy of novels by Etienne Leroux, a member of this language’s “Sixtiers” movement. This language used in a novel in which Ben du Toit hunts for evidence of his former student Jonathan Ngubene’s death in the custody of the Special Branch. For 10 points, name this non-English language used in *Rumours of Rain* and *A Dry White Season* by André Brink.

ANSWER: Afrikaans

13. Although he did not play the same instrument as Joe Smith and Gus Aiken, this musician credited those two men rather than his main early collaborator as the prime influences on his style. One of this musician’s songs begins with the lyrics “It’s gone and started rainin’ / I’m as lonely as a man can be.” Throughout World War II, singer Billy Eckstine performed with this musician, including recording his song “Stormy Monday Blues.” This composer of “Blues in Thirds” replaced Louis Armstrong’s wife Lil as the pianist for the 1928 iteration of Armstrong’s (\*) “Hot Five.” This developer of a “trumpet-style” technique of fast octaves headlined at the Grand Terrace Café in Chicago, where his orchestra’s theme tune was “Rosetta.” Dizzy Gillespie and Charlie Parker are said to have created bebop while in this man’s band. For 10 points, name this pianist nicknamed the “fatha” of modern jazz piano.

ANSWER: Earl (Kenneth) “Fatha” Hines

14. Two answers required. According to the memoir *All Things Possible*, one of these two men lost the key assistance of advertising guru David Garth to the other because of indecision. Michael Dowd, a campaign manager for one, investigated the other's fraudulent relationship with former Miss America Bess Myerson. In a primary election featuring these two men, one lost to the other after joking that the capital was "a city without a good Chinese restaurant." Another election purportedly featured signs comparing these two men and urging voters to not choose "the (\*) homo." In that election, one of these men ran as a Liberal Party candidate to succeed Abraham Beame after the other defeated both him and Bella Abzug for the Democratic nomination. That contentious 1977 election was covered in the book *Ladies and Gentlemen, the Bronx is Burning*. For 10 points, name these two men, the Mayor of New York City and Governor of New York during most of the 1980's.

ANSWER: Mario Cuomo and Edward "Ed" Koch [need both in any order, prompt on Cuomo]

15. Images of this deity were burned during the month of Peritia to symbolize his resurrection as the "fire of heaven" in the *egersis* ritual. Bronze pillars stood outside a temple of this deity at Gades. A notable stele depicts this non-Zeus deity in a tunic with a domed hat and a double-sided axe over one shoulder. Like the Jewish God, pigs were forbidden inside this deity's temple, which Herodotus reported to have had one pillar made of gold and another pillar made of emerald. Livy recounts that a vision sent by this god, whose devotees included the (\*) Barcas, guided Hannibal across the Alps. Hiram I built the chief temple of this deity, whose name means "king of the city." and who was often syncretized with Heracles. Alexander the Great built a land bridge for a 332 BC siege so as to sacrifice in the temple of, for 10 points, what chief god of Tyre and its Phoenician colonies?  
ANSWER: Melqart [or Melicarthus]

16. An Amott-Harvey index less than -0.3 corresponds to a large value for this dimensionless quantity. In a fakir state, but not an impaled state, this quantity for a mixture is linearly weighted by the areal fraction of each component. This quantity can be measured empirically by plotting mass squared versus time in the Washburn method. It can also be measured using a goniometer on a surface with micro-patterned PDMS pillars. The Cassie-Baxter model reformed the Wenzel model for explaining this quantity's (\*) hysteresis. If this quantity is zero, then the Wilhelmy and de Nouy methods simplify to the same thing. From a force balance, the solid-gas minus the solid-liquid surface energies equals the liquid-gas surface energy times the cosine of this quantity in the Young-Dupre equation. It exceeds 150 degrees in the lotus effect and is determined by the ray lying tangent to a liquid droplet. For 10 points, name this angle that characterizes a surface's hydrophobicity.  
ANSWER: contact angle [or wetting angle; accept wettability until "cosine" is read, and prompt on it afterwards; prompt on angle]

17. Glenn Loury showed that the prevalence of this phenomenon could be lowered by credit constraints in a stochastic model. Chetty and Saez got direct access to IRS records to validate Gary Solon's claim that rates of this phenomenon are low and geographically variable. By tracking Riddarhuset surnames and patronymics in Sweden, Gregory Clark argued that this phenomenon is less prevalent than short-term studies suggest. Alan Krueger used Miles Corak's data showing that this phenomenon declines as (\*) inequality increases to produce the Great Gatsby curve. In the Becker-Tomes model, parental propensity to invest and inheritability of endowments decrease this phenomenon. It declines with increases in intergenerational elasticity, which is often estimated as the slope of a regression between offspring and parent income. For 10 points, name this phenomenon in which the economic or social situation of a family changes between generations.  
ANSWER: intergenerational social mobility [or intergenerational economic mobility; accept equivalents referring to mobility among social classes, but NOT geographic mobility]

18. Several characters in this play discover that they can no longer make their hands into fists, due to drinking far too many glasses of ouzo, after singing a folk song that begins with the lyrics "Shama, shama." When one character in this play is reminded of "six wonderful days at the Plaza Hotel," another points out that "six days does not a week make." While complaining about one character's behavior at an Albanian restaurant in Staten Island one character in this play contrasts the "Watchers" with the "Doers." Snow falls through a hole in the (\*) skylight at the end of this play's second act, after a wife calls her husband a "stuffed shirt" during a fight. One protagonist of this play sets up her widowed mother Ethel with an eccentric neighbor named Victor Velsaco. For 10 points, cautious Paul won't join his spontaneous new wife Corie for a stroll in Washington Square in winter in what play by Neil Simon?  
ANSWER: Barefoot in the Park

19. This man's advisor, former Penn State professor Robert Oliver, wrote a biography of him subtitled "The Man Behind the Myth." He temporarily fled his country in 1912 by using the accurate excuse that he was serving as a representative at a Minneapolis-based Methodist conference. This leader executed five officers for embezzling food money from the National Defense Corps, which had led to thousands of soldiers dying during a wartime march. This man met his second wife in 1933 while she was working as an interpreter for the (\*) League of Nations. Protests against him began after a fisherman discovered the dead body of a high schooler with a tear gas capsule lodged in his eye near the port city of Masan. Thousands were killed during this leader's suppression of the Jeju Island uprising. A CIA-owned plane helped this man escape to Hawaii after the April Uprising in 1960. For 10 points, name this first president of South Korea.  
ANSWER: Syngman Rhee [or Rhee Syngman]

20. In one work, this man proposed going “beyond philosophy” to an “ultra-philosophy” that he dubbed “sportive” theory,” which argues that the state forms merely as a result of an instinct for play. This philosopher repeatedly illustrated his metaphysics by claiming that “being” is a raft after the shipwreck of existence. His major work of aesthetics analyzes the lack of representation of human figures in modern art. He discussed the life that seeks to overcome itself as the “noble” rather than (\*) “common” life. He advocated for a form of reason pre-occupied with affirming life, called “vital reason.” This philosopher declared that “I am myself and my circumstance, and if I don’t save it, I don’t save myself.” The major work of this author of *The Dehumanization of Art* describes a heroic “unusual individual” who is crushed by the rise of the “mass-man.” For 10 points, name this Spanish philosopher who wrote *The Revolt of the Masses*.

ANSWER: José Ortega y Gasset

21. In some tales, a female warrior named Erc joined this group. Several members of this group were trapped in a web by three demigoddesses, until one of them finally agreed to fight Irnan in single combat and won. A text source describing them is translated as *The Interrogation of the Old Men* or *Colloquy of the Ancients*. A giant named Dryantore sought revenge against this group after catching them in a magic fog. The Hostel of the Quicken Trees was used to imprison much of this group by the invader Midac. This group's leader used a poison (\*) spear to resist the sleep-inducing lyre music of the fire-breathing goblin Aillen. The battle of Gabhra brought down this group. It included a dude with a "love-spot" on his forehead who tried running off with Grainne. The one-eyed Goll mac Morna in turns opposed and teamed with, for 10 points, what band of warriors including Diarmid O'Dyne, who were led by Finn mac Cool?

ANSWER: Fianna [or Fenians; accept any answer indicating the band, army, entourage, companions, posse, #squad, etc. of Finn mac Cool or Fionn mac Cumhaill until "Finn"; do NOT accept or prompt on "Fianna Fail"]

## Bonuses

1. This novel's conflict between the secret policeman Leroy Hollingsworth and the devoted Stalinist William McLeod may have been inspired by Russian spy Rudolf Abel, who was living one floor below this work's author at the time of his arrest. For 10 points each:

[10] Name this novel focusing on Beverly Guinevere's rooming house in Brooklyn, whose residents include the author's stand-in Michael Lovett.

ANSWER: Barbary Shore

[10] *Barbary Shore* is the second novel of this Pulitzer-winning author who described the last days of convicted murderer Gary Gilmore in *The Executioner's Song*.

ANSWER: Norman (Kingsley) Mailer

[10] Mailer's earliest and most famous foray into political journalism was this profile of JFK's rise at the 1960 Democratic National Convention.

ANSWER: "Superman Comes to the Supermarket"

2. A notable essay on this literary genre has an "Epistemo-Critical Prologue" explaining why it's so fragmentary, and was a failed attempt at "habilitation" into a University of Frankfurt professorship. For 10 points each:

[10] Name this genre of early modern theater analyzed in a 1925 essay which claims that "Allegories are, in the realm of thoughts, what ruins are in the realm of things." Authors who wrote in this genre included Daniel Caspar von Lohenstein.

ANSWER: trauerspiel [or German tragic drama; or German mourning play; prompt on tragedy; prompt on German Baroque theater]

[10] This author of *Arcades Project* wrote *The Origin of German Tragic Drama*. He wrote that the rise of film weakens the "aura" which gives art authenticity in "The Work of Art in the Age of Mechanical Reproduction."

ANSWER: Walter (Bendix Schönflies) Benjamin

[10] In that essay, Benjamin likens the cameraman's view of reality to *this professional*, as opposed to the painter, who is like a magician. Henry Marsh's memoir *Do No Harm* and Atul Gawande's book *Better* are about this job.

ANSWER: surgeon [or surgery; accept neurosurgeon or neurosurgery since that is what Marsh does; prompt on doctor or medical professional]

3. At this point in the day, you're probably reflecting on how nice it would be if humans could biosynthesize caffeine. Sadly, no. For 10 points each:

[10] The last enzyme in the caffeine biosynthesis pathway, which is disappointingly expressed only in plants, converts theobromine to caffeine using this ubiquitous methylation cofactor. In humans, it is also required to convert norepinephrine to epinephrine.

ANSWER: S-adenosyl-methionine [or SAM]

[10] The starting material, xanthosine, is a purine native to humans, but rather than metabolizing it to stimulants, we oxidize it to this worthless compound, which accumulates in gout. Birds excrete nitrogen in the form of this compound.

ANSWER: uric acid [or urate]

[10] Humans would probably make more caffeine than plants since we express the enzyme HGPRT, an easy route to xanthine from degraded nucleotides through one of these purine biosynthesis pathways. They are contrasted with *de novo* routes.

ANSWER: salvage pathways

4. This conflict broke out after one force invaded the Thurgau and the Abbey of St. Gall. For 10 points each:  
[10] Name this war, which according to one account, ended in a peace agreement commemorated when the two opposing armies shared “milk soup” on the battlefield, with one side providing the bread and the other providing the milk.

ANSWER: First War of **Kappel** [or the **Kappel** Wars; do NOT accept or prompt on “Second War of Kappel”]

[10] A few years after the First War of Kappel ended, the conflict revived. In that conflict, this Zurich pastor and Marburg Colloquy attendee died in a lopsided October 11, 1531, battle.

ANSWER: Huldrych **Zwingli** [or Ulrich **Zwingli**]

[10] In 1656 and 1712, Catholic and Protestant cities in Switzerland duked it out again in wars usually named for this Swiss municipality. Catholics won the first, but Protestants won the second, which is also sometimes named for the county of Toggenburg.

ANSWER: **Villmergen**

5. An institute called Nucleo de Arte promotes art in this country, the southernmost country where traditional *shetani* sculptures are made by the Makonde people. For 10 points each:

[10] Name this African country which is now demolishing much of its colonial “Moderno Tropical” architecture, where huge public murals depict the victory march of FRELIMO troops.

ANSWER: **Mozambique** [or República de **Moçambique**]

[10] The British Museum contains two collaborative sculptures from Mozambique which were made from fusing lots of these objects together. One such sculpture is called *Tree of Life*; the other is in the shape of a throne.

ANSWER: **weapons** [or **guns**; prompt on “metal tools”] [The throne is called *Throne of Weapons*.]

[10] This contemporary Mozambican painter of crowded, chaotic murals such as *Final Judgment* was discovered while serving as a ball boy at a tennis club. His *Nude with flowers* shows a yellow-hued woman with a flower growing out of her nipple.

ANSWER: **Malangatana Ngwenya** [accept either underlined portion alone]

6. Answer the following about anthropological hoaxes and frauds, for 10 points each.

[10] The Philippine Tasaday people were falsely proclaimed to have never left this “Age” of material development. Marshall Sahlins wrote about the *Economics* of this age, which can be divided into Paleolithic and Neolithic.

ANSWER: **Stone** Age

[10] While an anthropology grad student at UCLA, this New Agey author published *The Teachings of Don Juan: A Yaqui Way of Knowledge*, claiming that a Toltec priest in Mexico taught to turn into a crow and fly while he was on lots of drugs.

ANSWER: Carlos **Castaneda**

[10] This Franco-American polymath published the *Walam Olum*, a fake Lenape myth long regarded as real, in his two-volume survey *The American Nations*. John James Audubon sketched about a dozen fake organisms to prank this man's species-finding efforts along the Ohio River.

ANSWER: Constantine **Rafinesque**

7. This work is the basis for Robert Bresson’s final film, *L’Argent*. For 10 points each:

[10] Name this work that begins with a trivial crime committed by the boy Mitya which convolutedly escalates into the murder of the pious widow Mariya Semenovna by the serial killer Stepan. It was its author’s final novella.

ANSWER: *The **Forged Coupon*** [or ***Fal'shivyi kupon***; or *The **Forged Banknote***; or *The **Counterfeit Note***]

[10] This Russian author wrote *The Forged Coupon* as well as *The Kreutzer Sonata*.

ANSWER: Lev (Leo) Nikolaevich **Tolstoy**

[10] In *The Kreutzer Sonata*, Pozdnyshev tells the story of murdering his wife to strangers in one of these locations.

ANSWER: **train** compartment [accept clear equivalents for “train,” such as **locomotive**]

8. In the top left corner of this painting, a feces-covered sign reads “Vote for Bobus,” a reference to a character created by Thomas Carlyle. For 10 points each:

[10] Name this painting in which Carlyle himself appears on the right side. This painting depicts people of various social classes watching workers dig up a road.

ANSWER: Work

[10] *Work* is the best known painting by this pre-Raphaelite, the grandfather of the author of *Parade's End*.

ANSWER: Ford Madox Brown

[10] Brown's portrait of Louis IX for the All Saints Church in Cambridge was done in Stained Glass. This American artist, a contemporary of Louis Comfort Tiffany, decorated the interior of Boston's Trinity Church and received the Legion d'honneur for inventing opalescent stained glass.

ANSWER: John La Farge

9. This symbol's lower argument is typically a positive odd integer, and it can take on values of zero, one, and negative one. For 10 points each:

[10] Name this generalization of the Legendre symbol. Using this symbol instead of the Legendre symbol can make the calculation of some residues a bit quicker. It is indistinguishable from the Legendre symbol when its bottom argument is an odd prime.

ANSWER: Jacobi symbol

[10] The calculation of Legendre symbols is guaranteed to work by combining some of their properties with this “golden theorem”. For distinct positive odd primes, it states that the congruences “ $x^2 \equiv q \pmod{p}$ ” and “ $x^2 \equiv p \pmod{q}$ ” are either both solvable or both unsolvable unless  $p$  and  $q$  are both congruent to three modulo four.

ANSWER: law of quadratic reciprocity [or theorem of quadratic reciprocity]

[10] This mathematician provided eight proofs for the law of quadratic reciprocity, some of which can be found in his *Disquisitiones Arithmeticae*. He also made contributions to differential geometry and also names the normal distribution.

ANSWER: Carl Friedrich Gauss

10. This movement was spearheaded by the collection *Faith and Rationality*, and its major proponents include Nicholas Wolterstoff and William P. Alston. For 10 points each:

[10] Name this movement in Christian apologetics that sprung up in the 1980's. It seeks to prove that belief in God or religion can be fully rational even if it is not supported by evidence.

ANSWER: reformed epistemology

[10] This Notre Dame-based philosopher of *Warranted Christian Belief* and *God and Other Minds* is a leader of the reformed epistemology movement.

ANSWER: Alvin Plantinga

[10] Objections to “reformed epistemology” may cite this philosopher's unpublished 1952 article “Is There a God?”, which describes a teapot orbiting the Sun as the example of a scientifically unfalsifiable claim.

ANSWER: Bertrand (Arthur William) Russell, 3rd Earl Russell

11. Answer the following about the thrilling world of medieval property laws, for 10 points each.

[10] In 1279 and 1290, the Statutes of Mortmain prohibited this specific action from happening to feudal lands. The monarchy disliked when this action happened because it hampered revenue production.

ANSWER: giving land to the church [or frankalmoin; accept obvious equivalents, such as a religious institution taking over land; prompt on giving land to a corporation; prompt on alienation; prompt on substitution; prompt on giving, selling, or leasing lands]

[10] This other statute, passed in 1290, codified the right of a tenant to exchange his land for money with permission of the crown, strengthening the monarchy and hastening the end of feudalism. It effectively ended subinfeudation, or the sub-leasing of land by vassals.

ANSWER: Quia Emptores [or the Third Statute of Westminster, prompt on Statute of Westminster]

[10] Both the Statutes of Mortmain and Statute of Quia Emptores were passed by this English king who intended to strengthen the monarchy that had weakened under his father Henry III. He also expelled the Jews from England.

ANSWER: Edward I [or Edward Longshanks]



12. In lieu of naming random-ass Norse cameo characters, for 10 points each, answer the following about lore that inspired some especially crazy Nazi shit:

[10] This god's powers inspired the stylized logo that Heinrich Himmler picked for the SS. He is doomed to die after wrestling the Midgard Serpent.

ANSWER: **Thor** [or **Donar**] [Each S in "SS" resembles a lightning bolt.]

[10] The *Ahnenerbe*, a Nazi pseudo-archaeology group, explored this region in part because Himmler believed a subterranean city of Aryans here may have survived a prehistoric world ice age brought on by a collision of an ice moon with the earth. A version of an oral epic in which King Gesar descends into hell is from here.

ANSWER: **Tibet** [or **Bod**; prompt on **Himalayas** or East **Asia**]

[10] A "society" named for this mythical far-northern land emerged under the Nazis, in part because a hoax called the Oera Linda Book inspired the silly belief that the Aryan race really emerged from this fake place.

ANSWER: Ultima **Thule** [or **Thule** Society; or **Thule**-Gesellschaft]

13. Name some things about molecular dynamics simulations, for 10 points each:

[10] The MD force fields AMBER and CHARMM are widely used to model this biochemical process. This process is aided by molecular chaperones and turns a random coil into four levels of structure.

ANSWER: protein **folding** [or word forms]

[10] The MMFF force fields and their variants were developed by TA Halgren at this company for use in screening drug candidates. This company names a widely used encyclopedic index for chemicals and biologicals.

ANSWER: **Merck** & Co. [or **Merck** molecular force field; or **Merck** index]

[10] Integrating Newton's equations over time for a molecular dynamics simulation is almost always done with this numerical algorithm, which is based on two third-order Taylor series expansions for position. Its velocity form is similar to the leapfrog algorithm.

ANSWER: **Verlet** algorithm [or velocity **Verlet** algorithm]

14. The man who successfully defended this city was later promoted to lieutenant colonel, albeit after his 1780 demise. For 10 points each:

[10] What city was the site of a failed British attack on May 25, 1780? It was successfully defended by Fernando de Leyba, who constructed Fort San Carlos.

ANSWER: **St. Louis** [or **San Luis**]

[10] The failed British assault on St. Louis occurred at the same time as a failed assault on Cahokia, partially repulsed by George Rogers Clark. The year before, Clark led men on a daring winter march to reclaim Fort Sackville at this midwestern city without suffering a casualty.

ANSWER: **Vincennes**

[10] Clark was blamed for the American loss at the Battle of Blue Licks, during which Israel, the son of this man, died. This person was hired to blaze the Wilderness Road through the Cumberland Gap.

ANSWER: Daniel **Boone**

15. Frank Wilczek, the codiscoverer of this principle, summarized a paradox about it as "Quarks are Born Free, but Everywhere They Are in Chains." For 10 points each:

[10] Name this principle, which states that the bonding between particles such as quarks becomes weaker as they get closer together.

ANSWER: **asymptotic freedom** [prompt on partial answer]

[10] Asymptotic freedom avoids the existence of these points where the coupling constant of an interaction becomes infinite. Unfortunately, one of them remains a problem in QED.

ANSWER: **Landau poles**

[10] Asymptotic freedom holds where this function, the dependence of the coupling constant on energy scale, is less than zero. In QCD that condition holds for 16 or fewer quark flavors.

ANSWER: **beta** function

16. This man's Chief of Staff was a Frenchman named Beaufort d'Hautpoul. For 10 points each:

[10] Name this commander who, in service of the Khedive, defeated the Ottomans at the Battles of Konya and Nezib to obtain short-lived territorial gains.

ANSWER: **Ibrahim Pasha** of Egypt

[10] Ibrahim Pasha's dad was this Albanian, who broke from the Ottomans to set up a dynasty that would rule Egypt until 1952.

ANSWER: **Muhammad Ali** Pasha al-Mas'ud ibn Agha [or **Mehmet Ali** Pasha]

[10] The mystic El Hadj Umar Tall reportedly healed Ibrahim Pasha's son. He went on to found this short-lived empire in modern-day Mali, Senegal, and Guinea before dying in a gunpowder explosion. Named for a West African people, its capital was at Segou.

ANSWER: **Toucouleur** Empire [or Segu **Tukulor**; or **Tijaniyya Jihad** State]

17. In this work, fourteen-year-old Jenny Peace tells "The Story of the Cruel Giant Barbarico, the Good Giant Benefico, and the Little Pretty Dwarf Mignon," which she sets in Wales. For 10 points each:

[10] Name this work whose title character, the plump Mrs. Teachum, forces nine girls to reform themselves during nine days at a boarding school. It is sometimes considered to be the earliest children's novel in English.

ANSWER: *The **Governess**, or The Little Female Academy*

[10] *The Governess* is a work of this author of *David Simple*, whose more prominent brother created the characters of Harriet Fitzpatrick, Mrs. Bridget Blifil, and Sophia Western.

ANSWER: **Sarah Fielding** [prompt on **Fielding**]

[10] Sarah Fielding wrote that she had become "as intimately acquainted with all the Harlow[e]s, as if [she] had known them from [her] Infancy," in a set of "Remarks" on this novel. This epistolary novel by Samuel Richardson is likely the longest novel in the English language.

ANSWER: **Clarissa**, or *The History of a Young Lady*

18. Like Prokofiev's Violin Concerto No. 1, which inspired it, this piece begins with a slow movement, then a scherzo, and then a finale. For 10 points each:

[10] Name this concerto. Paul Hindemith played the solo part at its premiere, after Lionel Tertis declined.

ANSWER: William **Walton's Viola Concerto** in A minor [prompt on partial answer]

[10] This Scottish violist, a member of the London String Quartet at its end, made a revised version of Walton's viola concerto in 1936. He also commissioned Bartók's viola concerto, which remained unfinished at Bartók's death.

ANSWER: William **Primrose**

[10] Primrose is perhaps best known for his many recordings of this Berlioz "symphony in four parts with viola obbligato," which is based on a Byron poem about a certain character's pilgrimage.

ANSWER: **Harold in Italy**, *Symphony in Four Parts with Viola Obbligato*, Op. 16 [or **Harold en Italie**, *Symphonie en quatre parties avec un alto principal*]

19. Catholic schooling need not end in late adolescence! For 10 points each:

[10] Many engaged Catholic couples take clerical lessons about marriage known as Pre-[*this place*]. At a wedding here, Jesus turned water into wine.

ANSWER: **Cana** [accept Pre-**Cana**]

[10] Many older converts to Catholicism go through this education program, whose undertakers go through a phase as Inquirers before becoming Catechumens.

ANSWER: **RCIA** [or **Rite of Christian Initiation of Adults**]

[10] This Greek-derived term refers to the period of learning *after* a convert has been baptized, most prototypically the fifty days after the Easter Triduum, in which you learn more about the sacraments you've just started receiving.

ANSWER: **mvstagogy**

20. This writer listed his literary commandments in his quasi-satirical work “Decalogue of the Perfect Short-Story Writer.” For 10 points each:

[10] Name this author of *The Decapitated Chicken and Other Stories* who founded an experimental group called the “Consistory of the Gay Science” together with his countrymen from Uruguay.

ANSWER: Horacio **Quiroga**

[10] Quiroga’s works were heavily influenced by this literary style most associated with Rubén Darío, which used extremely stylized verse and imagery to express spiritual and emotional values.

ANSWER: **Modernismo**

[10] This other *modernismo* author wrote the four-volume *Sonatas* about the adventures of the fictitious Marqués de Bradomín, as well as the play *Bohemian Lights* about the blind poet Max Estrella. He also wrote a satire about the tyrant Banderas, and several short fiction works set in his native Galicia.

ANSWER: Ramón del **Valle-Inclán** (y de la Peña)

21. This geometry has two singularities, one at its namesake radius which can be removed via coordinate transformation, and a second, true singularity at its origin. For 10 points each,

[10] Name this geometry which describes a black hole with no charge and no spin.

ANSWER: **Schwarzschild** metric

[10] This value for a Schwarzschild Black Hole is equal to  $6M$  in natural units. The gravitational potential at this location can be taken to be the observable amount of energy radiated as a test particle falls into the black hole.

ANSWER: **innermost stable circular orbit** [or **ISCO**; prompt on partial answer]

[10] The Schwarzschild metric can be transformed into this other set of coordinates which possesses only radial null geodesics. It does this by using the Regge-Wheeler “Tortoise” coordinate which equals the conventional “ $r$ ” plus “two  $M$  times log of  $r$  over  $2M$  minus 1.”

ANSWER: **Eddington-Finkelstein** coordinates