

ACF Nationals 2016

Packet by Michigan B (Kenji Golimlim, Todd Maslyk, Collin Parks, Jack Watts), Illinois (Andrew Wang, Alex Fregeau), and Chicago C (Samir Khan, Tamara Vardomszkaya, Sam Winikow, Marianna Zhang)

Tossups

1. A high-rise building in this country was nicknamed “Skeletor” since it was abandoned midway through its construction after the declaration of martial law. Voters in this country were encouraged to vote “three times yes” on a referendum that, among other things, aimed to abolish its senate. To obtain foreign currency, this country’s government established a chain of shops called Pewex where consumers could buy Western goods. In 1970, protests against rising food prices were brutally put down by this country’s ZOMO police force. Gary Cooper holds a ballot instead of a gun in a poster based on *High Noon*, used during an election in this country. This country, the setting of the 1980 cult film *Teddy Bear*, had its western border set at the Oder-Neisse Line after World War II. For 10 points, name this country whose president Wojciech Jaruzelski negotiated the Round Table Talks with the trade union Solidarity.

ANSWER: **Poland** [or **Polish People’s Republic**; or **Polska** Rzeczpospolita Ludowa]

2. A group at RAIR lab at RPI is devoted to classifying candidate solutions for this function, and have made use of tree-normalization to do so. Using up-arrow notation, Milton Greene showed that when k is the input to this function, it will be greater than “3 followed by point five k minus 2 up arrows followed by 3.” This function, which was introduced alongside the maximum shifts function, equals 6 for $n = 3$, 13 for $n = 4$, 4,098 for $n = 5$, but for $n = 6$, its current value is not known, but we know that it is greater than 3.5 times 10 to the 18,267th power. Represented with a sigma, it asymptotically grows faster than any computable function. This function was discussed in a paper fixing the number of states in a program’s input, and it counts the number of 1s outputted by a namesake device. For 10 points, identify this function created by Tibor Rado, which is named for a type of Turing machine that is itself named for a hard-working animal.

ANSWER: **Busy Beaver** function [do not accept or prompt on “beaver function”]

3. This title character wants to learn news, such as being informed that a playwright died of shock upon seeing one of his wine caskets break and how another playwright goes by a new name because he’d be willing to fence the sea for money. This character is imprisoned by a figure seen carrying a giant mortar who complains about the death of his pestles. This character speaks entirely through proxy, and says that she had attempted to return to a certain city, but an Assembly had voted against it. While trying to pull this character out of a pit, the Lamachians get in the way and Megara’s people are too weak to be helpful. Along with Festival and Harvest, this figure is rescued from a cave by Trygaeus, who rides a flying dung beetle to heaven. For 10 points, name this character who titles an Aristophanes play written briefly before a treaty was signed to end the first phase of the Peloponnesian War.

ANSWER: **Peace** [or **Eirene**; or **Reconciliation**]

4. This island is where the mimic octopus, which can mimic sea snakes and jellyfish, was first discovered. The cave-dwelling species of crab *Cancrocaeca xenomorpha* is native to this island's region of Maros, where 30,000-year-old hand stencils were found at Pettakere cave. This island's name may refer to the iron deposits surrounding its Lake Matano. Houses called *tongkonan* with saddle-shaped roofs are built by this island's Toraja people, who converted to Christianity in the early 1900s. This island is home to the Moramo Waterfalls, and its Minahassa Peninsula is indented by the Gulf of Tomini. The Gowa kingdom built a castle on this island that later became Fort Rotterdam, located in its most populous city, Makassar. This island is west of the Moluccas and directly east of Kalimantan. For 10 points, name this island of Indonesia, alternatively known as Celebes, which is east of Borneo and known for its odd shape.

ANSWER: Sulawesi [accept Celebes until it is read]

5. These figures are made to build towers of stones after being stripped of their clothes by Datsue-ba, who constantly knocks over those towers. Kishimojin became a protector of these figures after the Buddha hid one of them under his rice bowl. These figures are protected from club-wielding demons by being hid in robes and being read mantras. A ceremony that attempts to appease the spirits of these figures is called mizuko kuyo, and involves dressing a statue with a red cap. These figures are protected by an analogue of Ksitigarbha named Jizo. These figures are celebrated on a day that displays various ornamental dolls on a red carpet, and one in which carp streamers are flown. Dead examples of these figures can't cross the Sanzu River because they haven't accumulated enough good deeds. For 10 points name these people who celebrate the Shichi-Go-San festival at 3, 5, and 7 years of age.

ANSWER: children [accept infants or babies or other answers that convey the same idea; accept deceased or dead children; accept stillborns or aborted fetuses]

6. During a siege, this city was reportedly defended by a trained war lion, felled in one blow by Hashim at Bahrseer. Shortly after being captured, this city was given back by the first Peace of Nisibis. Ammianus Marcellinus claims that its "founder" was Vardanes. In a battle named for this city, the usurper Procopius failed to execute a pincer attack, forcing his cousin to retreat and be killed by a flying spear. The last remaining monument of this city, its White Palace, contains the largest vault in the world, a massive brick arch. This city was known by Arabs as "al-Mada'in" or "the cities" due to its many suburbs, one of which was sarcastically dubbed "better than Antioch," while another was home to the patriarch of the Nestorian church. Before dying in Samarra, Julian the Apostate tried to conquer this city. This city, located across from Seleucia on the Tigris, was the capital of Shapur II and his Sassanid Empire. For 10 points, name this ancient city that, along with Susa, was also a capital of Parthia.

ANSWER: Ctesiphon [accept Seleucia-Ctesiphon but prompt if answer does not give "Ctesiphon", or al-Mada'in or Mahoze before mentioned]

7. In one story by this author, the narrator is startled by the roar of a monoplane with its wings painted yellow, which prompts his mother-in-law to tell him about “airplane disease.” In that story by this author, the narrator tries to see a villa his friend has recommended, but only finds a perfectly intact bathtub. This author wrote a story in which the narrator’s wife dreams that he will die, which prompts the narrator to ask “Isn’t there anyone to come and strangle me in my sleep?” In that story by this author, the narrator is haunted by the title “semi-transparent” objects. Another of his stories describes how E’in erects a sign near a pond stating that the title animal will “ascend to heaven.” This author of “Dragon” and “Spinning Gears” wrote a story in which an old woman steals hair from corpses near the title gate to survive. For 10 points, name this author of “Rashomon”.

ANSWER: Ryunosuke **Akutagawa**

8. Michael Carr analyzed 98 phrases involving this concept in a certain language, and classified them on whether they had a positive or negative context. Power distance is an aspect of the “orientation” of this concept, one of five core taxonomies of Stella Ting-Toomey’s theory of negotiations named for this concept. Stephen Levinson’s politeness theory posits positive and negative forms of this concept, threats to which are warded off by politeness. Erving Goffman discussed avoidant and corrective processes in an article on this concept, subtitled “An Analysis of Ritual Elements in Social Interaction.” In *The Gift*, Mauss discussed the word *q’elsem*, which is analogous to this in Kwakiutl culture. Honor, dignity, and this concept can be used to classify cultures, and this concept and shame are emphasized in collectivist cultures. For 10 points, name this concept prevalent in Chinese culture, which can be thought of as one’s sense of worth due to their status.

ANSWER: **face** [or **mianzi**; or **lianzi**; or **yan**; also accept **face-work**; accept longer answers which incorporate the word face such as “**saving face**” or **keeping face**” or “**losing face**” – also accept **prestige** or **dignity** prior to the word “orientation” in the second sentence – prompt after that word]

9. In one lecture, this philosopher praises John Dewey’s method of “criticism of criticisms” while discussing the future rise of the “pragmatic Enlightenment,” which will valorize reflective transcendence. This man defends conceptual relativity, the idea that existence depends on convention, in a set of four lectures advocating “pragmatic pluralism.” This author of *Ethics Without Ontology* discussed an ant moving along in the sand accidentally drawing a picture of Winston Churchill, to put forth a theory of “causal connection” to formulate an argument that refutes metaphysical realism. In his book *Reason, Truth and History*, this philosopher refuted a skeptical argument by stating that the statement “there is a tree” would be incoherent if a tree were actually a simulated tree produced by a computer program. For 10 points, name this philosopher who thus reformulated the Brain in a Vat thought experiment, who died in 2016.

ANSWER: Hilary Whitehall **Putnam**

10. A substituted 3,5-bis(trifluoromethyl)phenyl-group is added to a thio derivative of this compound used in a form of Green catalysis. Like phenol and melamine, this compound was commonly used to form a polymer resin with formaldehyde; that resin's usage in home insulation has declined due to safety reasons. Derivatives of this compound form difficult-to-remove byproducts when using DCC in the Moffatt oxidation or peptide coupling, as derivatives of this compound form when hydrating a carbo-di-imide. Much like polyurethanes, polymers of this compound can be made by reacting di-iso-cyanates with diamines. This compound is the simplest member of a class of compounds which consist of a carbonyl bound to two amino groups. The first organic compound synthesized from inorganic compounds is, for 10 points, what chemical whose synthesis by Friedrich Wohler disproved vitalism?

ANSWER: ureas [or carbamides]

11. A book by this artist opens with a sketch of Cerberus as one-third unicorn and two-thirds dragon and features costume designs for a "necromancer" and a "man-at-arms." This artist, who made sketches for court festivities and tournaments, depicted his patron in a mythological painting inspired by a Sextus Propertius poem; that painting currently hangs in Skokloster Castle. A portrait by this artist includes two large cannons at the bottom and a double-headed eagle visible on the subject's torso to represent the Habsburgs; that portrait, *Fire*, is one of four done for Maximilian II and inspired by the classical elements. This man's painting *The Librarian* uses the pages of a book to represent the title figure's hair. His most famous painting is a depiction of his patron Rudolf II as the god Vertumnus, who has a pear for a nose. For 10 points, name this Italian Mannerist who created portrait heads composed of fruits and other inanimate objects.

ANSWER: Giuseppe Arcimboldo [or Giuseppe Arcimboldi]

12. After a court in this city failed to indict William Berner for murder, its political machine, which had been led by John Roll McLean and Thomas C. Campbell, lost power in the wake of destructive riots in 1884. The publishing house of Achilles Pugh in this city printed the Liberty Party candidate James G. Birney's newspaper *The Philanthropist*. This city contains over two miles of abandoned subway tunnels built before the Great Depression. Originally known as Losantiville, this city is home to the "Over-the-Rhine" neighborhood, named when European immigrants compared the Rhine to a waterway whose southern end is in this city, the "Miami and Erie Canal." The Quaker Levi Coffin helped migrants enter this city across a frozen river, inspiring the story of Eliza in *Uncle Tom's Cabin*. For 10 points, name this city known as "Porkopolis" and the "Queen City of the West," located in southern Ohio.

ANSWER: Cincinnati, Ohio

13. Frigeri et al. showed that materials without this property, such as cerium platinum silicide, can exhibit spin-triplet Cooper pairing. Crystals lacking this property can experience the bulk photovoltaic effect. Crystals with this property have a mean “E squared minus one” value of .968 as opposed to a value of .736 expected otherwise. Media can be shown to lack this property if they can produce light with double the frequency of incident light, as second-harmonic generation cannot occur. Because reciprocal space has this property, diffraction patterns in crystals can be described with just the 11 Laue groups. The point groups which do not have this property are classified as chiral or polar. This property must be absent in materials which exhibit pyroelectricity and piezoelectricity. For 10 points, name this property in which every point (x,y,z) in a unit cell has an indistinguishable counterpart at (-x,-y,-z).

ANSWER: **centrosymmetry** [accept word forms; accept **inversion symmetry**; accept answers that mention the presence of an **inversion center** or a **center of symmetry**; do NOT accept or prompt on partial answers]

14. One of these characters is overwhelmed by the “responsibility” of freezing everyone else in the world to realize his solipsistic sexual fantasies. The father of one of these characters is a bathroom attendant in a fancy hotel who stoically bears dealing with people's crap. Another of these characters refers to his tiny disfigured arm as “the Asset,” because he uses it to elicit pity from others. Johnny One-Arm is one of these people, as is someone who falls in love with a woman who survived an encounter with another serial killer; that character refers to that woman as the Granola Cruncher. Their monologues are given in response to questions that are omitted from the text. One of these characters is dressed in a suit and has a paper bag over his face on the cover of the book they appear in. For 10 points, name these characters featured in a set of “brief interviews” by David Foster Wallace.

ANSWER: **hideous men** [prompt on partial answer; prompt on “interviewees” before “brief” is read]

15. Prokofiev's symphony of this number included adaptations of music from his ballet *The Prodigal Son* and first appeared as his Opus 47 before being revised as his Opus 112.

Tchaikovsky's symphony of this number opens with a movement featuring a section marked “In movimento di Valse” in 9/8 time and features a recurring theme based on a fanfare beginning on A flat. A later symphony of this number opens with a series of open fifths with acciaccaturas played by flutes accompanied by sleigh bells, while its final movement features a solo soprano singing “Das Himmlische Leben”. A symphony of this number uses a theme from Bach's *Nach dir, Herr, verlanget mich* as the basis for a set of 30 variations and a coda in its E minor final movement, an orchestral passacaglia. Mahler's final “Des Knaben Wunderhorn” symphony shares this number with a Mendelssohn symphony that quotes a saltarello and a tarantella. For 10 points, give this number of the *Italian* symphony and the final symphony by Johannes Brahms.

ANSWER: **four** or **fourth** symphonies

16. This man obtained the submission of the Nogai by putting on a three-day feast, but following a revolt defeated them at the Yeya River delta. During this man's siege of Praga Fortress, he advised his soldiers to climb on bayonets if their ladders were too short to reach the top of the walls. This man analogized the peasant's need to know how to plow to the soldier's need to drill in his book *The Science of Victory*, and he was promoted to Generalissimo after a campaign where he won battles at Cassano and Trebbia, but was forced to perform a miraculous retreat through the Alps. He routed the Ottomans at the Battle of Kozluca and captured Tadeusz Kosciusko at Maciejowice (mah-chay-yo-VEET-seh), thwarting the attempt of Poland to achieve independence. He also nominally suppressed an insurrection led by a man claiming to be Peter III, Pugachev's Revolt. For 10 points, name this undefeated Russian general who spent his career in the service of Catherine the Great.

ANSWER: Alexander **Suvorov**

17. A dancer with this surname had an early success starring in *Annabel Lee*, a role created for her by her husband, the choreographer George Skibine. The principal female roles in *Scotch Symphony*, *Symphony in C*, and *Gounod Symphony* were created for a dancer of this surname. The first ballet director at the Lyric Opera of Chicago and the first prima ballerina of the New York City Ballet had this surname. Two dancers with this surname were included in the so-called Five Moons. A dancer with this surname made extremely popular appearances as the Sugar Plum Fairy in a 1954 production of *The Nutcracker* and as the title character in a 1949 production of *The Firebird*; both of those roles were choreographed by her then-husband, George Balanchine. For 10 points, give the surname of the sisters Marjorie and Maria, the latter of whom was the first-ever Native American prima ballerina.

ANSWER: **Tallchief** [accept Maria **Tallchief**, Elizabeth Marie **Tall Chief**, Marjorie **Tallchief**, or Marjorie Louise **Tall Chief**]

18. A wild six-headed one of these creatures was slain and hung on a chariot's dust-guard by Ninurta. A god who took this animal form was married to the piscine goddess Hatmehit and had his cult center at Mendes, where he was sometimes worshipped as the *ba* of Osiris. A Greek god briefly took this form in order to father one of these animals with Theophane. A god depicted with the head of this animal formed a triad with his consort Satis and daughter Anukis at Elephantine. The aforementioned Banebdjedet was the northern equivalent of that god with this animal form, who ruled over the caves of Hapi that served as the source of the Nile and used flood-borne silt and clay to form humans on his potter's wheel. A flying example of these animals was sent to rescue Phrixus and Helle from Ino; later, part of that one's carcass was sought by the Argonauts. Khnum had the head of, for 10 points, what type of male animal, also the source of the Golden Fleece?

ANSWER: a **ram** [prompt on "sheep" or "ovine" or *Ovis aries*; do not accept "ewe"]

19. This author examined his own fear of death in the wake of the passing of his parents Albert and Kathleen in the memoir *Nothing to be Frightened Of*. A novel by this man contains an oft-analyzed scene in which a woman frying eggs breaks one of the yolks, then throws the broken egg away. The narrator of one of this man's novels attempts to understand the equations "b equals s minus v x plus a one" and "a two plus v plus a one times s equals b", found in a friend's diary. Another of this man's novels includes a first-person chapter titled "Louise Colet's Version". Tony Webster realizes that his friend Adrian killed himself after impregnating his girlfriend Veronica's mother Sarah in one novel by this man, while in another, Geoffrey Braithwaite searches for the item that sat on a desk during the writing of "Un Coeur Simple". For 10 points, name this British author of the Booker-winning *The Sense of an Ending* and *Flaubert's Parrot*.

ANSWER: Julian **Barnes** [or Julian Patrick **Barnes**]

20. Aita et al. proposed a "rough Mt. Fuji" model to describe these constructs. The first and second derivatives of these constructs can be used to calculate the changes in a variance-covariance "inheritance matrix" denoted by the letter G. A "tunably rugged" example of these constructs is described by Kaufmann's NK model. The mechanism by which points on these constructs move toward a global maximum without getting "stuck" at a local maximum can be described by the "shifting balance" theory proposed by Sewall Wright. Allele frequencies are often used as the dependent variables on these graphs, whose "valleys" can be crossed by genetic drift and whose "peaks" tend to be reached when selection is strong. For 10 points, name these graphs which depict how the fitness of an organism changes due to changes in genotype.

ANSWER: adaptive **landscapes** [or fitness **landscapes** or evolutionary **landscape**, accept fitness **surfaces**]

Tiebreaker: This author wrote a libretto based on the *Anglo-Saxon Chronicle* for Deems Taylor's opera *The King's Henchman*. A "wind with a wolf's head" howls around the door of the central figures, who "were happy / for half an hour's time" while rocking in a chair together, in a poem that won this author a Pulitzer. The sight of a starving man in Capri prompts a passage about how the "awful weight" of "Infinity/Pressed down upon the finite Me!" in a poem by this author that controversially lost a contest in *The Lyric Year* to Orrick Johns. She wrote of how God "in one big torrent, set me free, washing my grave away from me!" in a poem that opens "All I could see from where I stood/Was three long mountains and a wood". For 10 points, name this poet of "The Ballad of the Harp-Weaver" and "Renaissance" who claimed "my candle burns at both ends; it will not last the night" in the first poem from her *A Few Figs from Thistles*.

ANSWER: Edna St. Vincent **Millay**

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Bonuses

1. A member of this family is shown wearing unusual eyeglasses and sitting next to a potted geranium in a painting by his brother, whose paintings include *Court of Death* and *George Washington, Patriae Pater*. For 10 points each:

[10] Name this family that included the Rubens and Rembrandt. Its patriarch, Charles, painted *The Artist in his Museum* and *The Exhumation of the Mastodon*.

ANSWER: the **Peale** family [accept Rubens **Peale**, Rembrandt **Peale**, or Charles Willson **Peale**

[10] Charles Willson Peale named two sons, including his youngest, after this Venetian artist of *Diana and Actaeon*, *The Rape of Europa*, and *Sacred and Profane Love*.

ANSWER: **Titian** [or Tiziano **Vecellio**]

[10] Peale named one of his daughters after this painter, a tutor of Elizabeth of Valois, the wife of Philip II of Spain. Her works include a double portrait depicting her teacher Bernardo Campi painting her portrait.

ANSWER: Sophonisba **Anguissola** [or Sophonisba **Angusciola**]

2. One of these essays controversially advocated the efficient killing of "useless" people, while another claims that "the English have no respect for their language" and is called "A Professor of Phonetics". For 10 points each:

[10] Identify these literary works by a certain author. One of them titled "First Aid to Critics" examines the critical reaction to Charles Lever's novel *A Day's Ride* and also considers the "Weaknesses of the Salvation Army".

ANSWER: **prefaces** to plays by George Bernard **Shaw** [accept equivalents like **Shaw's prefaces**; prompt on partial answer]

[10] Shaw discussed home rule and contrasted the English and Irish national characters in the "Preface for Politicians" included with this play, which centers on the business partners Larry Doyle and Tom Broadbent.

ANSWER: ***John Bull's Other Island***

[10] Shaw included an "Author's Apology" as the preface to this play, whose title refers to the fact that Vivie's mother was once a prostitute and now runs a brothel.

ANSWER: ***Mrs. Warren's Profession***

3. This period was started with the issuance of the “Noble Rescript of the Rose Garden,” and led to both the first paper currency and the first post offices in its empire. For 10 points each:

[10] Name this period of reform which is usually held to have ended with the rise of the First Constitutional Era.

ANSWER: **Tanzimat** [or **Tanzimat**-I Hayriye, prompt on the “Auspicious Reorganization”]

[10] Sultan Abdulmecid I, who initiated the Tanzimat, issued this American artist his first patent for the telegraph, which he invented.

ANSWER: Samuel Finley Breese **Morse**

[10] The vizier responsible for the Tanzimat, Mustafa Resid Pasha, also negotiated this 1838 treaty which established commercial relations with Great Britain, at the behest of the English envoy Henry Bulwer.

ANSWER: Treaty of **Balta Liman** [or **Balta Limani**, prompt on just “Anglo-Ottoman treaty”]

4. The pediments of this structure depict scenes of the dedicatee's life while the metopes depict events such as the Gigantomachy and the Lapith/Centaur battle. For 10 points each:

[10] Identify this temple dedicated to Athena, the most prominent building on the Acropolis.

ANSWER: the **Parthenon**

[10] The metopes of the Parthenon are prime examples of this artistic style of the early 5th century BCE common throughout the Hellenic world. Its name was coined by Gustav Kramer to describe the heaviness of Greek sculpture of the period.

ANSWER: **severe** style [prompt on “Early Classical style”]

[10] To appear straight to the viewer, the columns of the Parthenon are slightly thinner at the top than the bottom, a correction known by this Greek name.

ANSWER: **entasis**

5. pBR322 is an example of a genetically engineered plasmid used as a “vector” for this technique. For 10 points each:

[10] Name this technique, which creates a recombinant gene, which is then inserted into a host organism to be replicated and studied.

ANSWER: **molecular cloning** [prompt on “cloning”]

[10] In this technique for molecular cloning, DNA fragments are linked by introducing overlap with PCR primers, then using a namesake “master mix” consisting of exonuclease, DNA polymerase, and DNA ligase to anneal the fragments where they overlap.

ANSWER: **Gibson assembly**

[10] Molecular cloning typically involves this process, in which a cell incorporates external genetic material. Along with conjugation and transduction, it is one of the three main methods by which prokaryotes can acquire new genes.

ANSWER: **transformation**

6. This object was originally used by Yu the Great to measure the depths of the great flood. For 10 points each:

[10] Name this golden-banded object originally found in the kingdom of Ao Guang. It typically is found tucked behind the ear of its owner, and it can change size on command.

ANSWER: **Ruyi Jingu Bang** [accept **Ruyi Bang** or **Jingu Bang**; accept **Sun Wukong** or **Monkey King's cudgel/rod/staff**]

[10] Xuanzang's other helper Zhu Bajie primarily wields a "supremely precious gold-imbued" one of these objects as a weapon.

ANSWER: nine-toothed **rake**

[10] Ao Guang, one of the four kings of the seas, is one of these creatures. They are the *yang* compliment to the *yin* fenghuang, and they are the only fictional animal in the Chinese zodiac.

ANSWER: **dragons** [or **long**]

7. In one novel by an author born in this country, an unnamed train station worker is pressured by his family into accepting bribes. For 10 points each:

[10] Name this African country home to the author of *The Beautiful Ones Are Not Yet Born*, Ayi Kwei Armah.

ANSWER: **Ghana**

[10] Ghanaian author Ama Ata Aidoo wrote many novels, such as *Our Sister Killjoy*, that critique this European country's exploitation of Ghana. Ghana was known as the Gold Coast when it was a colony of this country.

ANSWER: **United Kingdom** [or Great **Britain** or **U.K.**; prompt on **England**]

[10] This poet from Ghana described the title animal laying its eggs in the house of the narrator, then insisting that the house belongs to the animal, in a critique of colonialism called "The Weaver Bird." He was tragically killed in the 2013 Westgate shopping mall attack.

ANSWER: Kofi **Awoonor**

8. Answer the following about Henry Clay Warmoth, for 10 points each.

[10] Warmoth was forced to step down as acting governor of Louisiana when he was put up on impeachment charges, so this lieutenant of his took the oath and became the first black governor of a U.S. state in history, for six weeks in 1872. This mammoth figure was known for his skill at gambling.

ANSWER: P.B.S. **Pinchback** [or Pinckney Benton Stewart **Pinchback**]

[10] At around the same time, a league was formed by people like Edward Douglass White to oppose this entity, derisively called the "golden octopus." The long debate over whether this practice should be allowed in Louisiana ended after an 1891 speech by Benjamin Palmer at the Grand Opera House.

ANSWER: the state **lottery**

[10] This later governor of Louisiana gave a lengthy speech honoring Warmoth in front of the Liberty Place obelisk. He was known as the Kingfish, and proposed the Share Our Wealth plan.

ANSWER: Huey Pierce **Long**, Jr.

9. In this phenomenon, a plane wave encountering an obstacle is converted into a sum of spherical waves via a multipole expansion. For 10 points each:

[10] Name this phenomenon, which is not strongly wavelength-dependent and occurs more often in the forward direction than the reverse direction. It occurs when a particle's size is comparable in magnitude to the wavelength of incident light.

ANSWER: **Mie** scattering

[10] When the particles are much smaller than the wavelength of incident radiation, this form of elastic scattering occurs. The strong wavelength-dependence of this form of scattering gives rise to the color of the sky.

ANSWER: **Rayleigh** scattering

[10] The outputs of Mie and Rayleigh scattering can be visualized using one of these functions, which plot scattering intensity vs scattering angle for a given particle and a given incident wavelength.

ANSWER: scattering **phase** functions

10. This man summarized colonial relations by writing that "Spanish civilization crushed, ... English civilization scorned and neglected... and French civilization embraced and cherished" the Native American in his book *The Jesuits in North America in the Seventeenth Century*. For 10 points each:

[10] Name this historian who argued that the expulsion of Acadians was necessary in his seven-volume history *France and England in North America*, and also wrote *The Oregon Trail*.

ANSWER: Francis **Parkman**

[10] Parkman wrote a history of the conspiracy of this Ottawa chief, whose rebellion in the Great Lakes region is often said to have caused the "Proclamation of 1763" to be put out that same year.

ANSWER: **Pontiac** [or **Obwandiyag**]

[10] The title character is left to languish in an Austrian prison after he unwittingly aids the revolutionary professor Henry Speyer in this novel by Francis Parkman, which is thankfully his only foray into fiction.

ANSWER: **Vassall Morton: A Novel**

11. The recently-announced tools found at Lomekwi near Lake Turkana may usurp this industry's title of the earliest stone tool industry. For 10 points each:

[10] Name this stone tool industry that lasted from approximately 2.6 to 1.7 million years ago. It takes its name from the site at which the first specimen of *Zinjanthropus boisei*, now known as *Paranthropus boisei*, was found.

ANSWER: **Oldowan** industry or **Olduwan** industry [prompt on "Olduvai"]

[10] The Oldowan industry gets its name from Olduvai Gorge, famously excavated by this husband and wife team, who discovered the *Proconsul africanus* skull.

ANSWER: Mary and Louis **Leakey**

[10] The Turkana Boy is a 1.5 million year old *homo erectus* skeleton discovered in 1984 by a member of Leakey's team Kamoya Kimeu at this archaeological site in Kenya, which now provides the name for that boy.

ANSWER: **Nariokotome**

12. All work and sex is banned during this period, in which a subject often sits barefoot and is visited by people who may say “May you be comforted amongst the mourners of Zion.” For 10 points each:

[10] Name this usually seven-day period of mourning following a Jewish burial.

ANSWER: **shiva** [or sitting **shiva**]

[10] While sitting shiva, a mourner may often recite this prayer for the dead, which is in Aramaic. After a parent dies, it is typical to recite this prayer daily for eleven months.

ANSWER: **Kaddish**

[10] During a Jewish funeral, mourners often rend or tear their clothes in a ritual with this Hebrew name. It is always performed while mourners are standing.

ANSWER: **keriah**

13. A novel in this language is numbered according to the Fibonacci sequence, and features the title goddess descending into a noh actor, as well as a description of the eyes of a statue of the Amida Buddha. For 10 points each:

[10] Name this language, which was used to write *Seiobo There Below*. It also was used to write a novel in which Korin’s “life changes forever” after he finds a manuscript about four adventurers, *War and War*.

ANSWER: **Hungarian** [or **Magyar**]

[10] *Seiobo There Below* and *War and War* are by this “Master of the Apocalypse,” who allegorized fascism’s rise in a novel about a town’s fascination with a circus exhibiting a whale carcass, *The Melancholy of Resistance*.

ANSWER: László **Krasznahorkai**

[10] The epigraph to *War and War* enigmatically notes that “[this place] is sad.” The third part of Dante’s *The Divine Comedy* describes this place, including its Empyrean.

ANSWER: **Heaven** [or **Paradise** or **Paradiso**]

14. Electronic transitions due to crystal field splitting energies typically occur when absorbing light in this region of the spectrum. For 10 points each:

[10] Name this region of the spectrum, the lower energy of the two regions typically probed by spectrophotometry. Of the two regimes of the spectrum in which electronic transitions typically occur, this is the lower energy of the two.

ANSWER: **visible** light

[10] The fact that electronic transitions occur much faster than vibrational transitions explains this principle, which states that vibrational energy levels are most likely to change when there’s little change in nuclear coordinates.

ANSWER: **Franck-Condon** principle

[10] In vibrational spectroscopy, this type of transition occurs when a vibrational excited state is thermally excited to an even higher energy state. They do not appear in the final spectrum at low temperatures.

ANSWER: **hot** transitions or **hot** bands

15. This man used an improvised battering ram to break into an Egyptian tomb less than a hundred feet from King Ay's sepulchre, which he called the "tomb of the 12 monkeys." For 10 points each:

[10] Name this "Patagonian Samson," a circus strongman-turned-explorer for whom the tomb of Seti I is sometimes named, since he opened it up. This Italian also introduced an irrigation system to the Egyptian ruler Muhammad Ali Pasha.

ANSWER: Giovanni **Belzoni**

[10] In a feat of engineering, Belzoni blasted the sand away from this twin temple complex built by Ramses II for him and his queen Nefertari after his victory at Kadesh.

ANSWER: **Abu Simbel** temples or temple complex

[10] Belzoni was the first to bust into Khafre's temple, which is the second largest pyramid at this location, behind the Great Pyramid of Cheops.

ANSWER: **Giza** [or el-**Gizah**, or **Jizah**]

16. L. Ovreas studied the distribution of bacterioplankton in this sort of area, and found that bacterioplankton tend to aggregate in the chemocline region of it. For 10 points each:

[10] Name this kind of stratified lake in which the water in the *monimolimnion* rarely interacts with the upper layers, such as the mixolimnion. Mixing in this kind of lake usually takes decades or centuries.

ANSWER: **meromictic** lakes

[10] Because meromictic lakes store large amounts of gases, they are capable of producing this kind of disaster, which would kill us all if we were nearby, since these events release a massive amount of carbon dioxide.

ANSWER: **limnic eruption** [or **limnic explosion**; prompt on eruption or explosion; prompt on lake overturn]

[10] Since the carbon dioxide overturns a large quantity of water, limnic eruptions may produce these seismic sea waves, which are more frequently caused by earthquakes.

ANSWER: **tsunamis**

17. This composition is part of a trilogy of works by its composer inspired by the Tristan and Isolde myth, along with *Harawi* and *Cinq rechants*. For 10 points each:

[10] Name this 1948 orchestral composition whose ten movements, including "Garden of Love's Sleep" and "Joy of the Blood of the Stars", incorporate many recurrences of the "statue", "flower", and "love" themes.

ANSWER: the **Turangalila Symphony** [or **Turangalila-Symphonie**]

[10] This French composer of the *Turangalila Symphony* compiled the seven "modes of limited transposition". He wrote his *Quartet for the End of Time* while being held in a German POW camp.

ANSWER: Olivier **Messiaen**

[10] Messiaen's *Sept haikai* includes a number of imitations of instruments used in this style of courtly Japanese classical music. Alan Hovhannes learned to play its three major wind instruments, the *hichiriki*, the *sho*, and the *ryuteki*.

ANSWER: **gagaku**

18. The engineer Eupalinos blasted a tunnel through Mount Kastro on this island so he could build an aqueduct to supply its capital with water. For 10 points each:

[10] Name this island ruled in 538 BC by the tyrant Polycrates, who constructed a temple to Hera here dubbed the Heraion.

ANSWER: **Samos**

[10] The design of the Heraion at Samos is sometimes compared with the Throne Room of the palace at this ancient Minoan city on Crete. Linear B was deciphered here by Michael Ventris.

ANSWER: **Knossos**

[10] Another cool temple to Serapis, the Red Basilica, was built under the Roman emperor Hadrian along with a massive bridge in this ancient city. An earlier kingdom named for this city was ruled by the Attalid Dynasty, including several rulers named Eumenes.

ANSWER: **Pergamon** [or **Pergamum**]

19. The protagonist imagines his mother's decomposing body swallowing him up soon after his first sexual experience with a boy, a schoolmate named Joey. For 10 points each:

[10] Name this novel whose narrator David recounts his relationship with his former fiancée Hella and an Italian man in Paris on the eve of the latter's execution.

ANSWER: **Giovanni's Room**

[10] *Giovanni's Room* was written by this gay African-American author of *The Fire Next Time* and *Go Tell It on the Mountain*, who moved to Paris in 1948.

ANSWER: James **Baldwin** [or James Arthur **Baldwin**]

[10] David thinks of his intimacy with Joey and Giovanni in terms of this specific adjective, which Jacques warns him against. During much of the present day frame story, David is engaging in obsessive behaviors in response to this sensation.

ANSWER: **dirty** [or feeling **dirty**]

20. Its second edition includes a section called "Theory of the Will, in Preparation for the Deduction of Religion," which unifies the "moment of spontaneity" of the will and the "moment of consciousness." For 10 points each:

[10] Name this 1792 text which argues that God can be known through the senses, which check the desire of the will. On the strength of this treatise, its author was given a professorship at the University of Jena.

ANSWER: An **Attempt at a Critique of All Revelation** [or **Versuch einer Kritik aller Offenbarung**]

[10] When *An Attempt at a Critique of All Revelation* was published, the public got confused, since they thought it was written by Immanuel Kant, not this Transcendental Idealist.

ANSWER: Johann Gottlieb **Fichte**

[10] Fichte also praised the Roman empire for its "firm belief in its own eternal continuance" in this set of writings which promoted his home country's unification to fight against Napoleon's armies.

ANSWER: **Addresses to the German Nation** [or **Reden an die deutsche Nation**]