

ACF Fall 2017

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Tossups

1. The Mandukya Upanishad (mon-DOOK-yuh oo-PA-ni-shad) describes how the middle letter in the word “A-U-M” represents this activity, which is known as “svapna.” Locke argued that these experiences could be identified by the absence of true pain. While performing this activity, one thinker is unsure whether he was a butterfly or a man; that is the Daoist thinker Zhuangzi (JWONG-ze). St. Augustine asserted that people cannot be responsible for their actions during these experiences. Descartes questioned the veracity of the senses by considering whether he could be performing this activity. For 10 points, name this activity whose “lucid” type can occur during sleep.

ANSWER: **dreams** [or **dreaming**; or **svapna** until it is read; prompt on **sleeping**]

2. The Mozarabic Chronicle is the most detailed source describing this battle, which some historians believe was caused by greed for the riches of the Abbey of St. Martin. After being defeated by the eventual losing army at the Battle of the Garonne River, Odo of Aquitaine set this battle into motion when he requested aid from this battle’s winning commander. The losers of this battle were led by Abd el-Rahman, who died during it. Its winner was bestowed with the nickname “the hammer” and gained enough power to lay the foundations of the Carolingian Dynasty. For 10 points, name this 732 victory for Charles Martel that prevented the Umayyad conquest of France.

ANSWER: Battle of **Tours** [or the Battle of **Poitiers**]

3. The artist of a sculpture made of this material filed a lawsuit against its removal, saying that removing it would destroy it. Richard Serra’s *Tilted Arc* is made of this material, which Claes Oldenberg used for a sculpture of a giant tube of lipstick on caterpillar tracks. Jeff Koons used this material to create large sculptures based on balloon animals. Alexander Calder applied red paint to many of his works made of this material, which he suspended from wires to form mobiles. Anish Kapoor used this material for *Cloud Gate*, commonly known as Chicago’s “The Bean.” For 10 points, name this class of material often used in sculptural art, which includes aluminum and steel.

ANSWER: **metal** [or **steel**; or **aluminum**]

4. One enzyme requires the post-translational modification of this molecule binding to a lysine residue, allowing for coordination of a magnesium ion to the active site. This compound competes with oxygen to bind to an enzyme that usually produces two molecules of phospho-glycerate. Sometimes, this compound is stored in malate and released to the bundle-sheath cells. Photorespiration is caused when RuBisCO binds to oxygen instead of this compound. Carbonic anhydrase converts this gas to carbonic acid. This gas is the source of carbon in carbon fixation through the Calvin cycle. For 10 points, name this gas that is used up in photosynthesis and released in respiration.

ANSWER: **carbon dioxide** [or **CO2**]

5. In a scene from a novel by this author, the title character judges the quality of flour in a piece of bread by smelling it, causing another character to ridicule his nose as a “corn-sampler.” This author wrote a novel largely set at a boarding house owned by Madame Vauquer, whose tenants include the trouble-making Vautrin and the law student Eugène de Rastignac. In that novel, he depicted a retired pasta maker put into poverty by his free-spending daughters Delphine and Anastasie. He wrote a massive, interconnected series of novels which include *The Wild Ass’s Skin*, *Eugenie Grandet*, and *Peré Goriot*. For 10 points, name this French author of the *The Human Comedy*.

ANSWER: Honoré de **Balzac**

6. People in this country often clean their teeth with a short stick of wood called a *mefakia*, which serves as a natural toothbrush. A very spicy beef tartare in this country is known as *kitfo*. A popular honey-based mead called *tej* is popular in this country. In this country’s cuisine, meat is often seasoned with a spice blend called *berbere* and served upon a plate of *injera* bread made from the iron-rich teff grain. According to legend, a herder named Kaldi discovered coffee beans in this country. Many components of this country’s cuisine date back to its Axumite days.

For 10 points, name this landlocked East African country whose capital is Addis Ababa.

ANSWER: **Ethiopia**

7. William Brydon was the only European out of a force of five thousand British troops led by William Elphinstone to survive a massacre in this country. Texas representative Charlie Wilson supported covertly funding guerillas in this country. The Saur Revolution overthrew a prime minister of this country who in turn overthrew its last king, Zahir Shah. This country maintained its independence by serving as a buffer state between British India and Russia. The United States provided Stinger missiles to resistance fighters in this country known as *mujahideen*. For 10 points, name this central Asian country invaded by the Soviet Union in the 1980s, which was once ruled by the Taliban.

ANSWER: **Afghanistan**

8. This figure traveled to a foreign country, where he allegedly established seven and a half different churches. The Latin phrase “via et veritas et vita” comes from an answer to this man’s question in John 14. This man established churches such as Kodungalloor (ko-dun-ga-LOOR) throughout the course of his missionary activity in Kerala, India. This figure is also known by a name which means “twin,” Didymus. This disciple is unwilling to believe one fact until he can “thrust my hand into his side,” after which he exclaims “My Lord and my God” upon witnessing the crucifixion wounds of Jesus. For 10 points, identify this apostle of Jesus who was called “doubting.”

ANSWER: Saint **Thomas** the Apostle [or **Doubting Thomas**; or **Didymus** until it is read]

9. *Note to moderator: Take a second to read the pronunciation guides and the answerline.*

A gap between two types of these entities, denoted delta o, is minimized by the binding of carbon monoxide, which is one terminus of the spectrochemical series. The t_{2g} [“tee-two-gee”] and e_g [“ee-gee”] classifications of one type of these entities are the focus of ligand field theory. The wavefunctions of these entities are given by the product of Laguerre polynomials and spherical harmonics. These entities can be described as Gaussian-type or Slater-type in a calculation which linearly combines them. One of these entities has a distinctive dumbbell-and-donut shape; that entity has the subscript z^2 [“z-squared”]. Types of these entities include s, p, d and f. For 10 points, name these entities which hold electrons around an atom.

ANSWER: atomic **orbitals** [or specific orbitals: s **orbitals**, p **orbitals**, d **orbitals** or f **orbitals**; accept “d-z-squared” **orbital**; accept Gaussian-type **orbitals** or Slater-type **orbitals**; accept molecular **orbitals** until “Laguerre polynomials” and anti-prompt afterwards]

10. The appendix of a book in this genre includes a poem satirizing “pious priests” who attack “Jack and Nell” in the name of “heavenly union.” The protagonist of that book in this genre recovers his sense of manhood after winning a fight with Mr. Covey. The protagonist of a novel in this genre has two children out of wedlock, Benny and Ellen, with Mr. Sands, who helps protect her from Doctor Flint. That book in this genre was written under the pseudonym Linda Brent by Harriet Jacobs. Olaudah Equiano and Frederick Douglass wrote books in this genre, which often end by describing the author’s life in the North. For 10 points, name this genre of memoirs about experiences in captivity.

ANSWER: **slave narratives** [prompt on partial answers; prompt on **memoirs** or **autobiographies**]

11. This country gained the provinces of Kexholm and Ingria by the terms of the Treaty of Stolbovo. This country was exempted from a neighboring country’s Sound Dues after it won a war named for general Hannibal Sehestes. Rene Descartes died in this country while giving private lessons to its queen, who eventually converted to Catholicism and abdicated the throne. A king of this country won the Battle of Breitenfeld before perishing a year later at the Battle of Lutzen during his invasion of northern Germany during the Thirty Years’ War. For 10 points, name this country once ruled by the Vasa Dynasty, which included rulers such as Christina and Gustavus Adolphus.

ANSWER: **Sweden** [or **Sverige**]

12. The oldest Western depiction of this scene is believed to be a sculpture commissioned by Gero of Cologne. The Latin words for “He must increase, but I must decrease” appear to the right of this scene in one panel painting. This scene is depicted on the net of a tesseract in a Surrealist painting. One painting of this scene shows three Breton women kneeling beside it, while another shows a Lithuanian flag above a flaming synagogue. This scene was painted on the front of the closed *Isenheim Altarpiece* by Matthias Grünewald. For 10 points, name this scene depicted in “Yellow” by Paul Gauguin and in “White” by Marc Chagall, which is commemorated in passion plays.

ANSWER: the **Crucifixion** of Jesus Christ [or reasonable equivalents]

13. At a conference in Chapel Hill, this scientist gave the “sticky bead argument” to argue for the existence of gravitational radiation. His talk “There’s Plenty of Room at the Bottom” inspired the development of nanotechnology. This physicist shared a Nobel Prize in Physics with Schwinger and Tomonaga for developing quantum electro-dynamics. This man used the idea that all positrons are just electrons moving backwards in time in order to develop the straight and squiggly lines used in his namesake diagrams. For 10 points, name this American physicist whose lectures make up his namesake three-volume *Lectures on Physics*, and who often played the bongos.

ANSWER: Richard **Feynman**

14. A novel by this author compares the results of a battle to “a slow movement of the hand on the dial of human history.” Isaiah Berlin’s essay *The Hedgehog and the Fox* focuses on a novel by this author in which a young man learns wisdom from a kind peasant named Platon Karataev. In a novel by this author, Prince Alexei is captured in Moravia and meets the opposing general, whom he idolizes until seeing him in person. This author wrote a novel in which Pierre Bezukhov becomes obsessed with assassinating an opposing leader after the Battle of Borodino. For 10 points, name this author who depicted Napoleon’s ill-fated invasion of Russia in his epic novel *War and Peace*.

ANSWER: Leo **Tolstoy** [or Lev Nikolayevich **Tolstoy**]

15. This composer wrote a piece with a concerto grosso-like structure featuring oboe, flute, and trumpet soloists. This composer of the *Capricorn Concerto* wrote a violin concerto with a breakneck *moto perpetuo* third movement. This composer wrote an overture for Richard Sheridan’s play *The School for Scandal*. In one of this composer’s operas, a pregnant Erika runs into freezing water to force a miscarriage after Anatol chooses to marry the title character. This composer arranged the second movement of his string quartet as a standalone piece for string orchestra that is often performed at major funerals. For 10 points, name this American composer of *Vanessa* and *Adagio for Strings*.

ANSWER: Samuel Osborne **Barber II**

16. Alan Gerber and David Green conducted field experiments on effective ways to persuade people to perform this action. A method named for Jean-Charles de Borda is one way of determining the result of this action. Duverger’s law relates the system used for this action to a country’s form of government. This action is compulsory in Brazil and Australia. This action is the subject of Condorcet’s method and Arrow’s impossibility theorem, which states that it is impossible to combine individual preferences for three or more candidates. Some systems of this action are classified as “first-past-the-post.” For 10 points, name this action of participating in elections.

ANSWER: **voting** [or word forms; or equivalents like **going to vote**; or **voting systems**]

17. Blade-wielding religious fanatics called *juramentados* in this country terrorized regular forces with their irregular, suicidal attacks. “Howling Jake” promised to make this country’s island of Samar a “howling wilderness” by “killing everyone over ten” in retaliation for the Balangiga massacre. This country’s Moro people led a lengthy guerilla war against its colonizers. Frederick Funston captured an important independence leader of this nation named Emilio Aguinaldo, who had earlier supported the Americans in defeating colonial Spanish forces in 1898. For 10 points, name this country which was an American colony for almost 50 years after the Battle of Manila Bay.

ANSWER: the **Philippines**

18. One of these objects named Dagon was detected by using coronagraphs to block out distracting sources of light. The main purpose of the HARPS and Kepler missions is to search for these objects. One way of measuring these bodies’ mass uses the binary mass function and “wobbles” in the orbits of larger objects near them; that is the radial velocity method. Transit photometry can detect these objects if there is a significant drop in brightness when they pass in front of a star. In early 2017, NASA announced the discovery of several of these objects in the Trappist-1 system that may be in the Goldilocks zone. For 10 points, name these planets that orbit stars outside of the Solar System.

ANSWER: **exoplanets** [or **extrasolar planets**; prompt on **planets** until it is read]

19. In Japan, spirits named “mizu” or “water” *people of this type* are honored in a funeral ceremony invoking a bodhisattva whose statues are commonly found on roadsides and graveyards named Jizo. Ghost-spirits named “baloma” become these entities in the belief system of the Trobriand Islanders. A Latino story describes a ghost who cries next to rivers named La Llorona who drowned people of this type. People of this type are targeted by the Greek Lamia and the European changelings, who stole these people away. For 10 points, what people may be paid a visit by Krampus if they’re naughty and Santa Claus if they’re nice?

ANSWER: **children** [or equivalents such as **kids** or a **child** or **young** people or “they’re **young**”; or **infants** or **babies**; or **fetuses** or unborn **children**; prompt on **humans**; or **people**]

20. A twelve-volume verse novel by this author relates the murder trial and execution of Count Guido Franceschini (FRAN-ches-KEY-knee). A poem by this author declares “O to be in England / Now that April’s here!” Another poem by this author begins “The rain set in early tonight” before the speaker describes strangling a woman with her own hair. A poem by this author of *The Ring and the Book* references “the gift of a nine-hundred years-old name” and describes a character painted by Fra Pandolf as having a heart “too soon made glad.” For 10 points, name this English poet of dramatic monologues such as “Porphyria’s Lover” and “My Last Duchess,” who married fellow poet Elizabeth Barrett.

ANSWER: Robert **Browning**

Tiebreaker. The R package *glmnet* (glim-net) is used to perform this technique. LASSO is a regularization and selection method for this technique. In machine learning, classification can be performed using the logistic type of this technique. The ridge method is another method for this technique that is used to combat overfitting of models generated by this technique. Models created by this technique can be fitted by minimizing the sum of squares of the residuals using the least squares approach. The linear variety of this technique fits a line to a set of data points. For 10 points, name this statistical technique used to estimate the relationship between variables.

ANSWER: **regression** analysis [or generalized **linear model** until “logistic” is read; prompt on **fitting** until “overfitting”]

Bonuses

1. Philip Johnson described one building in this country as “the greatest building of our time.” For 10 points each;
[10] Name this country home to a curvaceous titanium and glass art museum. Right outside that museum in this country stands a massive sculpture of a dog made of flowers, Jeff Koons’s *Puppy*.

ANSWER: Spain [or España]

[10] In addition to the Guggenheim Museum in Bilbao, Spain is home to this striking, elaborate church in Barcelona. This church, under construction since 1882, may finally be completed in 2026.

ANSWER: Sagrada Familia [or “Basilica I Temple Expiatori de la Sagrada Familia” or “Temple Expiatorio de la Sagrada Familia”]

[10] This Catalan architect of the Park Güell (gwell) and the Casa Milà designed the Sagrada Familia.

ANSWER: Antoni Gaudí i Cornet

2. This novel’s main characters are trapped in a cave by their bitter enemy Gagool. For 10 points each:

[10] Name this adventure novel, in which Sir Henry Curtis and Captain John Good help Ignosi overthrow Twala to become the king of Kukuanaaland.

ANSWER: King Solomon’s Mines

[10] H. Rider Haggard wrote *King Solomon’s Mines* in an attempt to outdo this Robert Louis Stevenson novel, in which Jim Hawkins discovers that Long John Silver leads a band of pirates.

ANSWER: Treasure Island

[10] At the beginning of *Treasure Island*, Billy Bones is given a piece of paper with this ominous symbol, warning him of his imminent death.

ANSWER: the black spot

3. For 10 points each, answer the following about bread and circuses.

[10] As part of this man’s namesake laws, grain was to be given out for free to Rome’s poor. This tribune bitterly hated Titus Annius Milo, whose bodyguards killed him as he was passing by on the Appian Way.

ANSWER: Publius Clodius Pulcher

[10] This massive amphitheater was commissioned by Vespasian on the site of Nero’s Domus Aurea to hold gladiator matches, public executions, and other spectacles. Its shell still stands today as an icon of Rome.

ANSWER: Colosseum [or Flavian Amphitheater]

[10] This Roman emperor took entertainment one step further by competing as a gladiator, though of course he always won his matches. After his death, the Year of the Five Emperors plunged Rome into chaos.

ANSWER: Commodus

4. Hückel’s rule states that cyclic, planar molecules with $[4n + 2]$ pi electrons must have this property. For 10 points each:

[10] Name this property where the delocalization of pi electrons through a cyclic arrangement of alternating single and double bonds confers extra stability to a molecule.

ANSWER: aromaticity [or word forms]

[10] Michael Faraday first isolated this aromatic compound during the production of portable gas. This simplest aromatic compound has formula C_6H_6 .

ANSWER: benzene

[10] This other class of hydrocarbons includes open-chain hydrocarbons such as propane and cyclic, non-aromatic compounds such as cyclopentane.

ANSWER: aliphatic [or word forms]

5. In one text, these characters are born after a skull of a man killed for playing the ball game loudly somehow impregnates a woman in the underworld. For 10 points each:

[10] Name these characters who trick their cruel half-siblings into climbing trees and becoming monkeys. These two characters also play the mythical ball game loudly.

ANSWER: the **Hero twins** [or **Hunahpú** and **Xbalanqué** (“sh-ba-lann-kay”)]

[10] The Hero Twins are featured in the Popol Vuh, a text written by this ethnic group of Central America.

ANSWER: **Mayans**

[10] The Hero Twins killed the demon Zipacna by luring him with a fake one of these animals. During his fight with the Hydra, Hera sent one of these animals to distract Heracles, which he kicked so hard it became a constellation.

ANSWER: **crabs** [prompt on **Cancer** by asking “what animal?”]

6. This poem describes people who “threw potato salad at CCNY lecturers on Dadaism.” For 10 points each:

[10] Name this poem whose third stanza repeats the line “I’m with you in Rockland” to Carl Solomon. It begins “I saw the best minds of my generation destroyed by madness.”

ANSWER: “**Howl**”

[10] “Howl” is by Allen Ginsberg, a member of this American literary movement of the 1950s that rejected standard narratives, opting instead for sprawling, often explicit, often psychedelic descriptions of the human condition.

ANSWER: **Beat** poets [or **Beat** generation; or the **Beats**; or **Beatniks**]

[10] A central work of the Beats is the Jack Kerouac novel *On the Road*, whose original draft was written in this unusual physical format.

ANSWER: one single **scroll** [accept any answer that indicates it is a single sheet of paper, or multiple sheets taped together into one continuous sheet]

7. Saint Stephen and Saint Augustine cradle the body of the title figure of this painting. For 10 points each:

[10] Name this painting, which depicts a dead Spanish nobleman of the title town. The upper portion of this painting features angels surrounding Jesus, Mary, and John the Baptist in Paradise.

ANSWER: *The **Burial of the Count of Orgaz*** [or *El **entierro del señor de Orgaz***; or *El **entierro del Conde Orgaz***; accept any other reasonable equivalents]

[10] *The Burial of the Count of Orgaz* is by this Mannerist painter of the Spanish Renaissance, nicknamed for his place of birth, Crete. He also painted *The Opening of the Fifth Seal*.

ANSWER: **El Greco** [or Doménikos **Theotokópoulos**]

[10] El Greco painted *The Burial of the Count of Orgaz* after moving to this Spanish city, where he lived until his death. He painted a landscape of this city showing its buildings under a dark, stormy sky.

ANSWER: **Toledo**

8. These people were the target of the Gordon Riots. For 10 points each:

[10] Name these people who were prevented from holding public office by the Test Act. This religious group is the dominant Christian denomination in Ireland.

ANSWER: **Catholics** [or **Catholicism**]

[10] This man, as Home Secretary, supported the repeal of the Test Act. As prime minister, this Conservative repealed the Corn Laws and established London’s first police force.

ANSWER: Robert **Peel**

[10] Another supporter of Catholic emancipation was this prime minister, who fought a famous duel with Lord Castlereagh. His four-month-long tenure as prime minister is the shortest ever in British history.

ANSWER: George **Canning**

9. The distribution of proteins in this structure is described by the fluid mosaic model. For 10 points each:

[10] Name this part of the cell that surrounds the cytoplasm. This structure is comprised of a phospholipid bilayer.

ANSWER: plasma **membrane** [or cell **membrane**]

[10] The plasma membrane contains many of these microdomains that play essential roles in signal transduction.

These features contain more glyco-sphingo-lipids and are more tightly packed than the rest of the membrane.

ANSWER: **lipid rafts** [prompt on partial answer]

[10] Lipid rafts also contain three to five times as much of this steroid than the surrounding bilayer. More generally, this molecule helps maintain the fluidity of plasma membranes in response to changes in temperature.

ANSWER: **cholesterol**

10. This man explained many of his ideas in his book *The Laws of Thought*. For 10 points each:

[10] Name this English mathematician whose namesake branch of algebra is based on variables with the values true or false.

ANSWER: George **Boole**

[10] Boole worked primarily in the algebraic type of this field of study, building upon the works of Aristotle in his *Organon*. More generally, this field of philosophy is concerned with techniques such as deductive reasoning

ANSWER: **logic** [or formal **logic**; or mathematical **logic**]

[10] This other English logician developed namesake laws in Boolean logic that show how, for example, “NOT quantity a OR b” is equivalent to “NOT a AND NOT b.”

ANSWER: Augustus **De Morgan**

11. Answer some questions about George Wallace’s presidential campaign, for 10 points each:

[10] Wallace ran on his segregationist credentials as governor of this state. His “Stand in the Schoolhouse Door” attempted to stop integration of its flagship university, and he cracked down on protesters in its city of Birmingham.

ANSWER: **Alabama** [accept University of **Alabama**]

[10] Wallace’s running mate was this leader of the Air Force during World War II. He humiliated the Wallace campaign by threatening to “bomb [the Vietnamese] back to the Stone Age.”

ANSWER: Curtis **LeMay**

[10] During his campaign, Wallace claimed that the only four-letter words these people did not know were “work” and “soap.” The Haight-Ashbury district was the center of a movement of these people during the Summer of Love.

ANSWER: **hippies** [do not accept or prompt on any other answers, including hipsters]

12. Answer the following about Nobel Prize winning economists, for 10 points each:

[10] The 2017 Nobel Prize in Economics went to Richard Thaler for his contribution to this specific field of economics, the study of the effect of psychological, social, cognitive, and emotional factors on economic decisions.

ANSWER: **behavioral** economics [accept **behavioral** finance]

[10] In 1996, this man and Reinhard Selten won the Nobel Prize for their study of non-cooperative games. He names a situation in a non-cooperative game where no player can improve their outcome when acting unilaterally.

ANSWER: John **Nash** [accept **Nash** equilibrium]

[10] Paul Krugman won the Nobel Prize in 2008 for his contribution to theories of this system. David Ricardo used Portuguese wine and English cloth to demonstrate the comparative advantage provided by this system.

ANSWER: international **trade**

13. A book by this author uses a combination of prose and poetic form known as haiban. For 10 points each:

[10] Name this Edo-period poet of the travel diary *The Narrow Road to the Deep North*.

ANSWER: **Matsuo Basho** [accept either underlined portion; also accept **Matsuo** Chuemon Munefusa; or **Matsuo** Kinsaku; or **Sobo**; or **Tosei**]

[10] *The Narrow Road to the Deep North* contains many poems in this style, which Basho is generally considered to be the master of. This Japanese style of poetry has a characteristic 5-7-5 syllable scheme.

ANSWER: **haiku**

[10] This American author wrote over 4,000 haiku in the last years of his life. This author also wrote a memoir whose second part, “The Horror and the Glory,” recounts his membership in the Communist Party in Chicago.

ANSWER: Richard **Wright**

14. Initiates in this religion are inducted through the Navjote ceremony, which is still practiced by Parsees. For 10 points each:

[10] Name this ancient monotheistic religion that was the official religion of Persia from 600 BC to 650 AD. Practitioners of this religion traditionally kept their dead on Towers of Silence.

ANSWER: **Zoroastrianism**

[10] The Amesha Spenta are the six “divine sparks” of this creator deity in Zoroastrianism, who opposes the evil spirit Angra Mainyu and the devas.

ANSWER: **Ahura Mazda**

[10] Most Zoroastrian sacred texts are written in this liturgical language, an Indo-European language closely related to Old Persian. Today, this language is primarily typeset in the Gujarati script.

ANSWER: **Avestan** [or **Zend**]

15. Despite the intense scientific debate in the 20th century, it is now accepted scientific fact that the Earth’s surface consists of massive, constantly shifting tectonic plates that make up this layer. For 10 points each:

[10] Name this region of the Earth that consists of the crust and part of the upper mantle. This region floats on top of the asthenosphere.

ANSWER: **lithosphere**

[10] This relatively small plate is located in between the North American and Pacific plates. This plate caused the massive 1700 Cascadia earthquake, which caused a tsunami in Japan.

ANSWER: **Juan de Fuca** plate

[10] In this type of plate boundary, plates slide past each other along a fault. The Dead Sea Rift and the San Andreas Fault are examples of this kind of boundary.

ANSWER: **transform** boundary [or **transform** boundaries; or **transform** faults; or **conservative** boundary; or **conservative** boundaries]

16. Each work in this collection, written between 1723 and 1725, features solo violin with strings and basso (bass-o) continuo. For 10 points each:

[10] Name this set of twelve violin concertos, published as its composer’s Opus 8. It includes two concertos nicknamed “*The Storm at Sea*” and “*The Hunt*.”

ANSWER: *The* **Contest Between Harmony and Invention** [or *Il* **cimento dell'armonia e dell'invenzione**]

[10] The first four concertos of *The Contest Between Harmony and Invention* are collectively known by this name. In the first of these concertos, the violas imitate a barking dog in the second movement.

ANSWER: *The* **Four Seasons** [or *Le* **Quattro Stagioni**]

[10] This “Red Priest,” an Italian Baroque composer of hundreds of concertos, wrote *The Four Seasons*.

ANSWER: Antonio **Vivaldi**

17. A major center of this civilization was Tyre in modern-day Lebanon. For 10 points each:

[10] Name this seafaring civilization of the Eastern Mediterranean. This civilization developed the oldest alphabet in the world.

ANSWER: **Phoenicians**

[10] The name Phoenicia references this main export of the region. It was collected from *Murex* sea snails, over ten thousand of which were needed to make one gram of this commodity. As a result, it was worth its weight in gold.

ANSWER: purple **dye**

[10] This Phoenician colony was legendarily founded by Dido and was destroyed by the Romans after it lost the Third Punic War.

ANSWER: **Carthage** [or the **Carthaginian** Empire]

18. An eyelid-less valet laughs at a character in this place when he asks for a toothbrush. For 10 points each:

[10] Name this location, where three characters are locked in Sartre's play *No Exit*. At the end of the play, Garcin declares that this place "is other people."

ANSWER: **Hell**

[10] This character from *No Exit* stabs Inez at the end of the play, but it does nothing because they are already dead.

ANSWER: **Estelle** Rigault

[10] In *No Exit*, Garcin claims that he was executed for running a pacifist one of these businesses. During the play, he watches his coworkers at one of these places call him a coward for trying to flee to Mexico.

ANSWER: a **newspaper** [accept answers describing a newspaper company, such as the **press**]

19. This song plays over the sound of helicopters in *Forrest Gump* when Forrest first deploys to Vietnam. For 10 points each:

[10] Name this Vietnam protest song by Creedence Clearwater Revival. During its chorus, John Fogerty repeats "it ain't me" and claims that he is not the title kind of person.

ANSWER: "**Fortunate Son**"

[10] "Fortunate Son" appears on the soundtrack of this widely panned 2016 group superhero film. Despite a 26 percent rating on Rotten Tomatoes, it won an Academy Award for Best Makeup.

ANSWER: **Suicide Squad**

[10] This other artist appeared on the *Suicide Squad* soundtrack with the song "Without Me." He's better known for the songs "Not Afraid" and "Lose Yourself," as well as his Slim Shady alter ego.

ANSWER: **Eminem** [or Marshall **Mathers**]

20. Examples of these machines include the SLAC at Stanford and the Large Hadron Collider near Switzerland. For 10 points each:

[10] Give this general term for a machine that propels particles to speeds nearing the speed of light, then collides them to study their tracks and paths.

ANSWER: **particle accelerator** [prompt on partial answer; prompt on particle **colliders**]

[10] This type of cyclic electrodynamic particle accelerator uses increasing magnetic fields correlated with the particle's increasing kinetic energy to maintain an unchanged orbital radius.

ANSWER: **synchrotrons**

[10] The Large Hadron Collider primarily collides these hadrons. Atomic number is defined as the number of these positively charged particles that are present in a nucleus.

ANSWER: **protons**