

### ACF Fall 2013

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1. In mass spectrometry, an aromatic cation with this many carbon atoms often appears at  $m/z$  equals 91. The signal for the central proton of an isopropyl group will have this many peaks in proton NMR. A violet-colored strong oxidizing agent has a metal in this oxidation state. That compound is potassium permanganate. This is the number of elemental gases that are diatomic at standard conditions. This integer is equal to the negative log of hydronium concentration of pure water at 25 degrees Celsius, and is also the number of valence electrons possessed by the most electronegative element, fluorine. For 10 points, give this number equal to the neutral pH value.

ANSWER: seven [or +7]

2. This man names a theorem for calculating the derivative of an energy eigenvalue with respect to an arbitrary parameter along with Hellmann. He completed a theory in which the propagator is proportional to the complex exponential of the action along a trajectory. In addition to contributing to that path-integral formulation of quantum mechanics, this man won the Nobel Prize with Schwinger and Tomonaga for contributions to quantum electrodynamics. Photons are represented by wavy lines in a set of diagrams named for him. For 10 points, name this American physicist known for his *Lectures on Physics*, along with a book whose title asks whether he is joking.

ANSWER: Richard Philips Feynman

3. A curlicue lies atop a half ovoid in this man's depiction of one of his lovers, *Portrait of Nancy Cunard*. He used a Hungarian girl as the model for his thin-nosed *Mademoiselle Pogany*. Another of his works depicts an ovoid head on its side. This sculptor of *Sleeping Muse* created a version of *The Kiss* in which two rectangular blocks are pressed up against each other. A work from his best known series of artworks elicited controversy at the American customs office for not looking like art. That series is composed of marble or bronze representations of the title animal in flight. For 10 points, name this Romanian sculptor of the *Bird in Space* series.

ANSWER: Constantin Brancusi

4. This author wrote a short novel whose title character kills Gamzat and joins his enemies, hoping to kill Shamil. The protagonist of another novel by this author unsuccessfully attempts to marry the prostitute Maslova to prevent her from spending time in prison. This author of *Hadji Murat* and *Resurrection* wrote about a judge who dies after falling while putting up curtains. A novel by this man opens with the title character's visit to Stepan Oblonsky's estate after his wife Dolly discovers his affair. The title character of that work has an affair with Count Vronsky and throws herself in front of a train. For 10 points, name this Russian author of *Anna Karenina* and *War and Peace*.

ANSWER: Leo Tolstoy

5. In a fight, this god was accidentally hit by a harpoon thrown by his mother, who instructed the weapon to let him go and strike his enemy instead. A symbolic marking representing one part of this deity had pieces that added up to 63/64, with the last piece being magically restored by Thoth. This figure once tricked another deity into eating lettuce covered in his semen, and also beat that rival in a race when he painted his boat to look like it was made of stone. This *wadjet*-eyed god avenged his father, who was chopped up by Set and scattered all over the Nile. For 10 points, name this son of Isis and Osiris, a falcon headed Egyptian god whose eyes represented the sun and moon.

ANSWER: Horus

6. The ancient capital of this country is bisected by the Perfume River, which has its source in the Annamite Range. The Lake of the Returned Sword, or Hoan Kiem, is found in the capital of this country. The Can Tho Bridge crosses the Bassac River in this country, which is home to the Tay and Kinh ethnic groups. The world's largest cave, the

Son Doong, is found in this country, which also contains the UNESCO Word Heritage sites of Ha Long Bay and the city of Hue. The Red River flows through the capital of this country, whose far south contains the Mekong Delta. For 10 points, name this Southeast Asian country that contains Ho Chi Minh City and Hanoi.

ANSWER: Socialist Republic of Vietnam [or Cong hoa Xa hoi chu nghia Viet Nam. Accept SRV.]

7. In a play set in this nation, Madame Arcati leads a séance that results in Elvira disrupting the Condomine family. The works of one literary group from this nation were termed “kitchen-sink realism.” A victim of electroshock therapy removes a homeless man named Davies from the title occupation of a play set in this nation entitled *The Caretaker*. Noël Coward and the “angry young men” hailed from this nation, as did the author of a play in which an elevator-like machine brings food to the assassins Ben and Gus in a basement. For 10 points, name this home nation of the author of *The Dumb Waiter*, Harold Pinter.

ANSWER: United Kingdom [Accept Great Britain or England.]

8. Sar1 (“sar one”) binds to the membrane of this organelle, and according to a classical model, shuttle vectors move between the “stable” components of this organelle. The somewhat lower pH of this organelle prevents KDEL from acting as a retention sequence, creating a COP-I (“cop one”) vesicle leaving this organelle. Clathrin is produced at the *trans* end of this organelle, whose most common model states that its cisternae “mature” as they move through it. Glycosylation of secreted proteins occurs in this organelle. For 10 points, name this organelle which is responsible for packaging and sorting proteins into vesicles, named for an Italian scientist.

ANSWER: Golgi apparatus [Accept Golgi body or Golgi complex.]

9. During the Jemdet Nasr period, this civilization started the use of cylinder seals. In one of this civilization’s cities, buildings featured painted clay cone mosaics, and the White Temple occupied a terrace there. It began with the settlement of Eridu, and the kings of its city-states were known as *lugals*, one of whom developed the first known law code in Lagash. This civilization was the first to farm year-round by employing irrigation canals, and its priesthood worshipped Anu and Inanna. This civilization’s Uruk period witnessed the development of cuneiform script. For 10 points, name this earliest known civilization that included the first urban centers at Ur and Akkad.

ANSWER: Sumerian civilization

10. Jose Sanjenis Perdomo witnessed this event. A central figure in this event left his job as a security guard in Hawaii, and Jared Leto gained 67 pounds to play him in the film *Chapter 27*. This event inspired the recording of the song “All Those Years Ago.” A photograph taken right before it by Annie Leibovitz captured a woman laying on the floor being kissed by a naked man. Howard Cosell announced this event on Monday Night Football, and it was allegedly prompted by the book *The Catcher in the Rye* or by irritation over the victim’s comment about being “more popular than Jesus.” For 10 points, name this event that saw Mark David Chapman kill a former Beatle.

ANSWER: the murder of John Lennon [accept equivalents, like the assassination of John Lennon; answers must mention John Lennon and indicate that he was killed]

11. In one novel by this author, a lawyer learns about his mother Louise’s infidelity and his brother’s illegitimate status when Léon Maréchal bequeaths his entire inheritance to one of the title characters. Rachel rings the city bells after stabbing an abusive German soldier in this author’s short story “Mademoiselle Fifi.” This author of *Pierre et Jean* wrote about a Prussian officer who detains a group of travelers until the title prostitute agrees to sleep with him, and in another of his works, Mathilde Loisel spends years trying to replace a lost piece of jewelry belonging to Madame Forestier she reveals to have been fake. For 10 points, name this French author of “Ball of Fat” and “The Necklace.”

ANSWER: Guy de Maupassant

12. This function has a fixed point known as the Dottie number equal to roughly 0.74. This function names a version of the discrete Fourier transform that uses only real numbers, and the Fourier series of an even function has only terms proportional to this function. Its Taylor series has “ $2n$  factorial” in the denominators and begins “one minus one-half  $x$  squared.” One law named for this function has a term in which it is multiplied by twice the product of side lengths  $a$  and  $b$ . That law is a generalization of the Pythagorean theorem. For 10 points, name this trigonometric function which for an angle in a right triangle is the adjacent side length over hypotenuse length.

ANSWER: cosine

13. This composer was inspired by the Japonisme movement to write an opera titled *The Yellow Princess*. Other works by this man include a piano concerto whose second movement imitates the sounds of frogs and crickets along the Nile River. In one of his works, the solo violin plays as if it is tuning before it is interrupted by a solo flute. In that work by this man, he utilizes xylophones to represent rattling bones. The same technique was used in the “Fossils” movement of a fourteen-part work by this composer, which also contains movements like “Tortoises” and “The Swan.” For 10 points, name this French composer of *Danse Macabre* and *Carnival of the Animals*.

ANSWER: Camille Saint-Saens

14. The fact that children learn this concept despite limited positive and negative evidence is central to the poverty of the stimulus argument. Modern theories include the categorial, dependency, and functional theories of this concept, which may also be phase-structure based. Noam Chomsky argued that this concept is predictive or “generative,” based on the innate, universal human capacity for understanding this concept. This term denotes study at an organizational level below syntax, which describes the arrangement of sentences. For 10 points, give this term for the set of structural rules that govern the composition of phrases and words in a natural language.

ANSWER: grammar

15. Its artist said of this painting that he could not fit the entire scene due to too many “walk-on parts.” This work’s background features two mesas on either side, the Roche du Mont and the Roche du Chateau. The dull sky in this painting is interrupted by a tall staff with a crucifix on its top. In this painting a child, who is looking up at a figure whose face is obscured by a hat, stands next to a man reading from a book. In the center of this painting, a white dog and a kneeling man surround a hole in the ground. For 10 points, name this 22-foot long painting depicting the funeral procession of the artist’s great uncle in the titular French countryside town, a work by Gustave Courbet.

ANSWER: A Burial at Ornans [or A Funeral at Ornans or Un Enterrement a Ornans]

16. *Mendez v. Westminster* affirmed the right guaranteed in this later case, as did *Sweatt v. Painter*. During arguments over this case, Felix Frankfurter remarked that Fred Vinson’s death was the first affirmative proof he’d ever seen of God’s existence. This case was extended to the District of Columbia in *Bolling v. Sharpe*. Kenneth and Mamie Clark testified in *Briggs v. Elliott*, a component of this case, about their “doll” experiment. The *Alexander* case struck down this case’s requirement that a central action should occur with “all deliberate speed.” For 10 points, name this 1954 case that overturned *Plessy v. Ferguson*, ruling that segregation in schools was unconstitutional.

ANSWER: *Oliver* Brown v. Board of Education of Topeka, Kansas [Prompt on “Briggs v. Elliot” before mention.]

17. Fabre d'Eglantine was indicted in a scandal surrounding the liquidation of one of these organizations. Members of one of these organizations publicly impaled Gabriel Towerson on Amboina Island for suspected espionage, and these organizations constructed the Inland Customs Line as well as forts at places like Batavia and Pondicherry. Two of these organizations fought three Carnatic Wars with each other, and Robert Clive was victorious at a battle between those two corporations that took place at Plassey. For 10 points, give the common name of these chartered joint-stock trade companies, the British instance of which was dissolved following the 1857 Sepoy Mutiny.

ANSWER: **East India Companies** [accept **French East India Company** before "impaled"; prompt on "India Companies"]

18. One philosopher from this country "proved" that a white horse is not a horse. One philosopher from here called benevolence, righteousness, propriety, and wisdom the four "sprouts" of morality. This country of origin of the School of Names counted the Agriculturalist philosophy among its Hundred Schools of Thought. This country was home to a philosopher who wondered whether he dreamt of being a butterfly, or was a butterfly dreaming of being a man. Another philosopher from here emphasized the virtues of humaneness, or *ren*, and of filial piety. For 10 points, name this home of Zhuang Zi, Mencius, and the author of the *Analects*, Confucius.

ANSWER: **China**

19. One holiday in this region celebrates the release of one of its central religious leaders from the Gwalior Fort. That festival, Bandi Shor, is the second most important festival in this religion after the new year, Vaisakhi. Adherents to this religion pray at temples called gurdwaras. One must recite the Mool Mantar while undergoing this religion's baptism ceremony, and once the baptism is completed, the new member of the Khalsa is required to wear the items known as the "5 Ks." The spiritual leader of this religion is a personification of its holy text, the Adi Granth. For 10 points, name this religion founded by Guru Nanak which holds holy the Golden Temple at Amritsar.

ANSWER: **Sikhism**

20. The title character of a novel by this author is hired as a stagecoach driver on the suggestion of Harmon Gow. In another novel by her, a native of Apex divorces Count de Chelles after her divorce proceedings cause Ralph to commit suicide. This author of *The Custom of the Country* wrote a novel in which the protagonist marries May Welland but falls in love with her cousin Ellen Olenska. In addition to writing about Newland Archer, this woman wrote a novel in which Zeena's husband agrees to a suicide pact with Mattie Silver taking the form of a deadly sled ride. For 10 points, name this American author of *The Age of Innocence* and *Ethan Frome*.

ANSWER: Edith **Wharton** [or Edith Newbold **Jones**]

21. Monarchomachs were political theorists belonging to this group, and this group established a colony in Florida before being killed by Spanish soldiers. The Conspiracy of Amboise was developed by these people, who lost most political rights in the Peace of Ales. The dragonnades were soldiers sanctioned by the king to convert and repress members of this group. Henry of Guise carried out the St. Bartholomew's Day Massacre against these people, while the Edict of Fontainebleau revoked tolerance granted to this group in the previous Edict of Nantes. For 10 points, name this group consisting of French Protestants persecuted in the 16<sup>th</sup> and 17<sup>th</sup> centuries.

ANSWER: **Huguenots**

X. This poem ends with a character waking up as "a sadder and wiser man." In this poem, one character bites down on his arm and drinks his blood to shout for help. Earlier, that character is saved by a hermit, a pilot, and the pilot's son. The nightmarish Life-in-Death loses the lives of "four times fifty living men" in a dice game to Death in this poem, which was included in the collection *Lyrical Ballads*. The main character of this poem, who has a "glittering eye" and a long beard, describes the presence of "water, water everywhere / nor any drop to drink" to a wedding guest. For 10 points, name this poem by Samuel Taylor Coleridge about the titular albatross-killing sailor.

ANSWER: *The **Rime of the Ancient Mariner***

X. In 2008, Mike Craft claimed he was hired by the mafia to kill this leader in hopes of luring Fidel Castro to this leader's funeral. This politician helped expand his nation's welfare state and regional development programs under the "Just Society" program. He used the War Measures Act to hunt down suspected terrorists after the minister Pierre LaPorte was abducted by the FLQ during the October Crisis, and his passage of the 1982 Constitution Act did

not prevent him from being ousted by his party two years later. For 10 points, name this Liberal, a Quebecois who served as the Prime Minister of Canada for fourteen years between 1968 and 1984, succeeding Lester Pearson.

ANSWER: (Joseph Philippe) **Pierre** (Yves Elliott) **Trudeau** [prompt on “Trudeau”]

X. The Barrovian sequence is used to classify types of this class of rocks by comparing them to index minerals. Andalusite and staurolite are common minerals found in them, an unusually dense type of which is found in subduction zones and called eclogite. Layering caused by shear on these rocks is known as foliation. Their “regional” form is formed by tectonic movement, while the “contact” type forms around magma intrusions. The precursor of one of these types of rocks is called the protolith, and slate is a type of it derived from shale. For 10 points, name this class of rocks formed after igneous or sedimentary rocks are exposed to extreme heat and pressure.

ANSWER: **metamorphic** rocks

1. They are depicted with two parallel lines in a circuit diagram, and a famous historical example of these devices was Benjamin Franklin’s Leyden jar. For 10 points each:

[10] Name this circuit component that consists of two conductors separated by a non-conducting region.

They can be used to store charge.

ANSWER: **capacitor**

[10] One of the most useful geometries for a capacitor is this one, since the electric field is constant in the bulk of the capacitor. In this geometry, capacitance is equal to epsilon nought times  $A$  over  $d$ .

ANSWER: **parallel plate** capacitor

[10] By contrast, in this geometry the capacitance per unit length is inversely proportional to the logarithm of the ratio of the outer and inner radii.

ANSWER: **cylindrical** capacitor [accept word forms such as **cylinder**]

2. The cities of Wheeling and Louisville lie along the banks of this river. For 10 points each:

[10] Name this tributary of the Mississippi that rises from the confluence of the Allegheny and Monongahela Rivers at Pittsburgh and flows past Cincinnati in its namesake state.

ANSWER: **Ohio** River

[10] This largest tributary of the Ohio River is formed from the confluence of the French Broad and Holston Rivers just outside of Knoxville and creates a namesake valley in northern Alabama.

ANSWER: **Tennessee** River [Accept **Tennessee Valley**.]

[10] This tributary of the Ohio is the principal river of Indiana, whose cities of Terre Haute and Vincennes lie on its course.

ANSWER: **Wabash** River

3. One of Eadweard Muybridge’s “movies” shows a woman with this disease walking. For 10 points each:

[10] Name this disease which destroys the myelin sheath, causing scars in white matter of the nervous system.

ANSWER: **multiple sclerosis** [accept **disseminated sclerosis** or **encephalomyelitis disseminata**; prompt on partial answers]

[10] Multiple sclerosis results in lesions in this section of the nervous system, which consists of the brain and spinal cord.

ANSWER: **central** nervous system [or **CNS**]

[10] More specifically, multiple sclerosis causes the loss of function in these glial cells in the central nervous system which promote the formation of the myelin sheath. Their peripheral counterparts are called Schwann cells.

ANSWER: **oligodendrocytes**

4. The right side of this painting shows a blue figure about to grab a nymph, while the top of this painting shows Cupid aiming an arrow at three Graces. For 10 points each:

[10] Name this Sandro Botticelli painting that shows Venus in her garden in the titular season.

ANSWER: La Primavera [or Allegory of Spring]

[10] *La Primavera* is housed in this Florentine gallery, which was begun by Cosimo de' Medici. Its design was completed by Giorgio Vasari.

ANSWER: Uffizi Gallery

[10] The Uffizi also contains this artist's bloody depiction of *Judith Beheading Holofernes*, possibly inspired by her own experience with rape. She showed a nude woman being harassed in *Susanna and the Elders*.

ANSWER: Artemisia Gentileschi

5. The Main Plot was an attempt by Henry Brooke to replace this king with his cousin, Arabella Stuart. For 10 points each:

[10] Name this target of the Gunpowder Plot, the first English king from the House of Stuart.

ANSWER: James I [or James VI of Scotland]

[10] James I was the son of this Scottish queen, who supposedly composed the "Casket Letters." The Rising of the North was an attempt to put this woman on the English throne in place of Elizabeth I.

ANSWER: Mary, Queen of Scots [or Mary Stuart]

[10] James I negotiated with the royalty of this country in an ultimately unfulfilled plan to marry Prince Charles with a princess from here, in an affair known as the "Match" of this country.

ANSWER: Kingdom of Spain

6. This book of the Bible consists of the four visions of its author, John, who wrote it on Patmos. For 10 points each:

[10] Name this final book of the New Testament which gives a summary of the Last Judgment and the End Days.

ANSWER: Book of Revelation [Do not accept "Revelations."]

[10] The Book of Revelation mentions a "white throne" from which God inscribes the names of the worthy in this object. In Judaism, this text is written on Rosh Hashanah and sealed on Yom Kippur.

ANSWER: the Book of Life

[10] In a parable from Matthew 25, the righteous people at Judgment Day are compared to these animals and set to the right of the throne. The speaker of Psalm 23 identifies as one of these animals, stating that the Lord is a herder of these animals.

ANSWER: sheep [or lambs]

7. Name these objects found near the Milky Way galaxy, for 10 points each:

[10] The Milky Way is orbited by these two dwarf galaxies, both of which are visible only from the southern hemisphere. The larger of the two contains R136a1, the largest known star.

ANSWER: Large and Small Magellanic Clouds

[10] These dense, roughly spherical collections of stars contain hundreds of thousands of stars of roughly the same age. All of the roughly 150 of these objects in the Milky Way are at least 10 billion years old.

ANSWER: globular clusters [prompt on clusters; do not accept "open clusters"]

[10] The Earth is located in an arm of the Milky Way named for this constellation and Cygnus. This constellation contains the blue-white star Rigel as well as a "belt" of three stars across its center: Alnitak, Alnilam, and Mintaka.

ANSWER: Orion

8. This novel's central character cuts off three of Pedro Tercero's fingers when Jean de Satigny reveals he is romantically involved with his daughter, Blanca. For 10 points each:

[10] Name this novel that follows the life of Esteban Trueba, who runs a plantation called Las Tres Marías.

ANSWER: *The* House of the Spirits [or *La casa de los espíritus*]

[10] *The House of the Spirits* was the debut novel of this Chilean author. Eliza Sommers disguises herself as a man while searching for Joaquin Andieta during the California Gold Rush in her novel *Daughter of Fortune*.

ANSWER: Isabel Allende

[10] Allende's sequel to *Daughter of Fortune*, *Portrait in Sepia*, follows a photographer named Aurora, who has this surname. *The House of the Spirits* opens by detailing the story of two sisters with this surname, Clara and Rosa.

ANSWER: del Valle

9. He argued that motion is impossible, because it requires traversing an infinite number of half-distances. For 10 points each:

[10] Name this Ancient Greek philosopher of the Eleatic school known for his namesake paradoxes, including that of Achilles and the tortoise.

ANSWER: Zeno of Elea

[10] Zeno of Elea is not to be confused with Zeno of Citium, who founded this school of philosophy, which emphasized overcoming destructive emotions through virtue and whose proponents included Marcus Aurelius.

ANSWER: Stoicism

[10] This founder of the Eleatics denied the existence of "non being" in the section "The Way of Truth" from his *On Nature*. In a Platonic dialogue named for him, he presents the Third Man Argument.

ANSWER: Parmenides of Elea

10. Guy-Lussac improved this analytical technique. For 10 points each:

[10] Name this procedure used to determine the concentration of a substance by slowly adding in a known concentration of another compound through a buret.

ANSWER: titration [Accept word forms.]

[10] A titration is theoretically completed when this condition is reached. This is the point at which the number of moles of the titrant are equal to the number of moles of the analyte.

ANSWER: equivalence point [Do not accept "end point."]

[10] Titration can be used to determine the degree of unsaturation in a polyene by adding an element which decolorizes in the presence of double bonds. Name either of the two elements commonly used.

ANSWER: bromine or iodine

11. Mist covers the background of one photograph taken at this location, "Clearing Winter Storm." For 10 points each:

[10] Name this area in California, the setting of the photograph "Monolith." A shadow covers much of the right side of another photograph taken here, "Moon and Half Dome."

ANSWER: Yosemite National Park

[10] The aforementioned photos were shot by this American photographer, who also captured a Wyoming national park in "The Tetons and Snake River." He captured the moon rising over Hernandez, New Mexico in another photo.

ANSWER: Ansel Adams

[10] Along with Willard van Dyke, Adams founded this photographic group based out of San Francisco. Edward Weston was a member of this group, whose work often depicted the American West.

ANSWER: Group f/64

12. In this novel, one character's mother dies of scarlet fever before he goes off to university to study chemistry. For 10 points each:

[10] Name this Gothic novel, whose title doctor tells his story of creation to Captain Walton. His experiments had indirectly caused the death of his brother William, for whom Justine was executed.

ANSWER: Frankenstein; or, the Modern Prometheus

[10] *Frankenstein* was written by this author who modeled Lionel Verney, the protagonist of her novel *The Last Man*, after herself.

ANSWER: Mary **Shelley**

[10] This childhood friend of Dr. Frankenstein nurses him back to health when he is attacked. Unfortunately, this man dies on the beach after being killed by the monster.

ANSWER: Henry **Clerval**

13. The protagonist of this novel communicates with No. 402, who sits in the opposite prison cell, by tapping. For 10 points each:

[10] Name this novel that describes the life of Rubashov, who is arrested during one of Stalin's purges. Rubashov ultimately confesses to crimes he did not commit in order to demonstrate his loyalty.

ANSWER: **Darkness at Noon**

[10] This Hungarian wrote *Darkness at Noon* and examined 20th century leftist politics in the context of the Spartacus revolt in *The Gladiators*.

ANSWER: Arthur **Koestler**

[10] Stalinist repression and prison life are central themes in this Russian author's novel *One Day in the Life of Ivan Denisovich*. He described his own time in a forced labor camp in *The Gulag Archipelago*.

ANSWER: Aleksandr **Solzhenitsyn**

14. This family included Ludovico, who was a famous patron of Leonardo da Vinci. For 10 points each:

[10] Name this Italian family that succeeded the Visconti family in power in a certain Italian city. Perhaps the most famous head of this family was Francesco, who brought this family to power.

ANSWER: House of **Sforza**

[10] The Sforza family ruled over this Italian city, the capital of Lombardy.

ANSWER: **Milan**

[10] When Napoleon took over Milan, he declared it the capital of this short-lived Italian republic. It was recognized by Austria in the Treaty of Campo Formio along with the Ligurian Republic.

ANSWER: **Cisalpine** Republic

15. The leading member of this school of economics argued that wealth arose from agricultural surplus in the 1758 *Tableau Economique*. For 10 points each:

[10] Name this school of French economists that included Francois Quesnay and Anne-Robert-Jacques Turgot and advocated an economic emphasis on agriculture.

ANSWER: **Physiocrats** [accept word forms such as **physiocracy**]

[10] The Physiocrats were critics of this economic policy in which a country aims to create a positive trade balance, thereby accumulating monetary reserves.

ANSWER: **mercantilism** [accept word forms]

[10] The Physiocrats believed that all economic value derived from this resource important to agricultural production. This resource is natural capital in the most basic sense.

ANSWER: **land** [accept **real estate** or other logical equivalents]

16. While studying under Balakirev, this man composed a tone poem depicting a witches' sabbath, *Night on Bald Mountain*. For 10 points each:

[10] Name this Russian composer who

depicted scenes by the painter Viktor Hartmann in his orchestral suite *Pictures at an Exhibition*.

ANSWER: Modest **Mussorgsky**



[10] Mussorgsky's *Pictures at an Exhibition* contains five of these sections, which serve as interludes between various movements of the suite. They depict the viewer walking between paintings.

ANSWER: **Promenades**

[10] *Night on Bald Mountain* gained recognition after its use in this 1940 film, where an arrangement of it by Leopold Stokowski makes up part of the finale. This film also features a scene based on *The Sorcerer's Apprentice*.

ANSWER: **Fantasia**

17. This period traditionally began with the Battle of Covadonga, where an Islamic army was defeated in northern Iberia by the Visigoth leader Pelagius. For 10 points each:

[10] Name this period that saw the expulsion of Islamic forces from the Iberian peninsula and the gradual formation of the kingdoms of Spain and Portugal.

ANSWER: **Reconquista** [or **Reconquest**]

[10] Ferdinand and Isabella completed the *Reconquista* by defeating this last emirate in Southern Spain in 1492. It was originally formed after the Almohad Caliphate was defeated.

ANSWER: **Granada**

[10] The Emirate of Granada was ruled by this final Islamic dynasty in Iberia. This dynasty is most famous for constructing the Alhambra, and it rose to power after the fall of the Almohads.

ANSWER: **Nasrid** Dynasty

18. This man attempted to depose Brigham Young as governor of Utah. For 10 points each:

[10] Name this bachelor president who won the Election of 1856 and failed to prevent the Civil War, handing over all his troubles to his successor Abraham Lincoln.

ANSWER: James **Buchanan**

[10] During Buchanan's presidency, Free-Staters and Border-Ruffians fought over the expansion of slavery during this conflict, which took place in a namesake territory.

ANSWER: **Bleeding Kansas** [Prompt on partial answers.]

[10] Bleeding Kansas was sparked by disagreement over this piece of pro-slavery legislation, a proposed Kansas Constitution that was endorsed by James Buchanan but boycotted by many others.

ANSWER: **Lecompton** Constitution

19. Answer the following about terriers, for 10 points each:

[10] An Affenpinscher terrier named Banana Joe won the 2013 incarnation of this dog show held every February by a certain Kennel Club in Madison Square Garden.

ANSWER: **Westminster** Kennel Club Dog Show

[10] Many terriers, including the Affenpinscher and Yorkshire terrier, are classified in this group of the smallest dogs, named for the fact that they don't actually have a purpose, most obviously exemplified by chihuahuas.

ANSWER: **Toy** Group

[10] This white and brown-spotted breed was first bred for fox hunting, by their namesake 19th century English parson. Ron Weasley's patronus is this kind of terrier.

ANSWER: **Jack Russell** terrier

20. She described the titular concept as the thing that "perches in the soul" and "sings the tune" in the poem "Hope is the thing with feathers." For 10 points each:

[10] Name this reclusive American poet from Massachusetts, who penned works like "I heard a fly buzz when I died" and "I taste a liquor never brewed."

ANSWER: Emily **Dickinson**

[10] In this Dickinson poem, she “passes the school where children played” while riding in a carriage after being picked up by an entity that “kindly stopped for me.”

ANSWER: **“Because I could not stop for Death”**

[10] In “The Only News I Know,” Dickinson writes that the only news she knows is “Bulletins all day from” *this*. In “Because I could not stop for Death,” she rides in a carriage that held “but just ourselves” and *this*.

ANSWER: **immortality**

21. This figure murdered Fimafeng, a servant of Aegir, during a feast hosted by that god. For 10 points each:

[10] Name this trickster figure from Norse mythology, who also turned into a mare and mated with a stallion named Svadilfari before giving birth to the horse Sleipnir.

ANSWER: **Loki**

[10] Loki’s relationship with the giantess Angrboda produced the children Fenrir, Hel, and a monstrous serpent named for this realm of mortals that sits on the other side of a rainbow bridge across from Asgard.

ANSWER: **Midgard**

[10] Thor once went fishing for the Midgard Serpent, using the head of one of these animals as bait. A primordial one of these nourished Ymir and licked some ice to give life to Buri, the first Norse god.

ANSWER: **cows** [Accept oxen.]

X. The narrator of this novel treats the wounds of a Kikuyu boy named Kamante, who later converts to Christianity. For 10 points each:

[10] Name this autobiographical novel describing the management of a coffee plantation in Kenya’s Ngong Hills.

ANSWER: **Out of Africa**

[10] The author of *Out of Africa*, Isak Dinesen, was originally from this European nation. Another author from this country, Hans Christian Andersen, wrote “The Little Mermaid.”

ANSWER: **Denmark**

[10] The title character of Dinesen’s short story “Babette’s Feast” makes an extravagant meal with 10,000 francs that she won through one of these events. Another one titles a Shirley Jackson short story in which Tessie is stoned to death.

ANSWER: **lotteries**

X. This war’s North American phase was known as King George’s War. For 10 points each:

[10] Name this world conflict that began with a Prussian invasion of Silesia and ended with the Treaty of Aix-la-Chapelle. It was sparked by a question over whether Maria Theresa should ascend a certain throne.

ANSWER: War of the **Austrian Succession**

[10] The Prussian invasion of Silesia violated this edict, which was supposed to secure Maria Theresa’s right to the throne. It was issued in the hopes of avoiding conflict with Salic Law.

ANSWER: **Pragmatic Sanction** of 1713

[10] This Holy Roman Emperor and father of Maria Theresa issued the Pragmatic Sanction due to his lack of male heirs by his wife Elisabeth Christine.

ANSWER: **Charles VI**

X. In a general parameter space, one approach to this problem is the gradient descent method, while on a sorted array one may use a binary approach. For 10 points each:

[10] Identify this general class of problems in computer science, all of which involve locating a target within a set of data.

ANSWER: **searching**

[10] One data structure that is often searched is this one, which is equivalent to an acyclic connected graph.

Because there is no single order in which to traverse it, its elements are often stored in a stack while searching.

ANSWER: **tree**

[10] Searching trees is easier if you use a type of tree that keeps its height low by automatically performing this action. There are many such types of trees, including AVL trees and red-black trees.

ANSWER: self-**balancing** [accept word forms such as **balanced**]