

**ACF Nationals 2016**  
**Editors' Packet 2**  
**Tossups**

1. The second movement of Stanislaw Skrowaczewski's (SKROV-a-chev-ski's) piece of this name is subtitled "Bruckner's Heavenly Journey." St. John Perse's poem "Vents" inspired Elliott Carter's piece with this name, which divides the instruments into four ensembles based on register. A passacaglia is followed by a toccata and chorale in the third movement of Lutoslawski's (loo-toh-SWAV-ski's) piece with this title, whose first movement "Intrada" opens with a section played over an F-sharp pedal note. The second movement of another piece with this title consists of dances played by two bassoons, two oboes, two clarinets, two flutes, and two muted trumpets. That piece's fourth movement parodies the invasion theme from Shostakovich's *Leningrad* symphony, and is marked "intermezzo interrotto." For 10 points, the movement "Game of Pairs" appears in Bela Bartok's instance of what type of piece written to emphasize a number of instruments instead of just one?

ANSWER: **Concerto for Orchestra** [prompt on concerto]

2. In the wake of this battle, one side held a council at which it was decided to murder Yakub Celebi, so that his brother could ascend the throne. An account of this battle by Constantine the Philosopher claims that wooden icons of Rachel wept in its aftermath. The leader of one side was attempting to defend the area he inherited after the death of an ineffective ruler called Uros the Weak. Another source congratulates King Tvrtko I for success at this battle, which occurred on St. Vitus Day. One side attempted to protect the mineral deposits at Novo Brdo, while the other tried to capitalize on its previous victory at Marica River. A mythical figure reputed to be the son of a dragon, Milos Obilic, reportedly avenged the decapitation of Prince Lazar by stabbing Murad I at this battle. For 10 points, name this 1389 battle which saw the Ottoman army invade a field in Serbia.

ANSWER: Battle of **Kosovo** [or **Kosovo** Polje; or the **Field of Blackbirds**]

3. After a mysterious letter prompts this novel's narrator to visit a summerhouse at night, he uses a tea table to fend off an attack by Bersonin, de Gautet, and Detchard. Near the end of this novel, the main character leads an attack by sneaking into a castle using a pipe that this novel's characters have called Jacob's Ladder. At the opening of this novel, Rose Burledon persuades the narrator to accompany Sir Jacob Borradaile on a diplomatic mission, leading to a journey through the title town. This novel's narrator stops in a forest where two soldiers, Colonel Sapt and Fritz von Tarlenheim, notice his resemblance to a man about to be crowned king. In this novel, Rudolf Rassendyll foils the machinations of "Black Michael" and Count Rupert of Hentzau, who have imprisoned the title character. For 10 points, name this first novel of its author to be set in Ruritania, a "romance" by Anthony Hope.

ANSWER: *The* **Prisoner of Zenda**

4. An author with this last name wrote about his house arrest in Turin in a novel describing his servant Joanetti and his faithful dog Rose. That author with this last name wrote *A Voyage Around My Room* and was named Xavier. Xavier's brother with this surname argued a certain figure's teachings are inherently infallible since he is exercising his sovereignty through his teachings. That thinker with this last name wrote a series of eleven *entretiens* in which a count, a knight, and a senator conclude that a public executioner is necessary to maintain the social order since he is "the bond of human association." That ultramontanist author with this surname reacted against the French Revolution in *Considerations on France* and wrote *On the Pope*. For 10 points, give this last name of the author of *The St. Petersburg Dialogues*, a Savoyard reactionary to the Enlightenment named Joseph.

ANSWER: Joseph and Xavier de **Maistre**

5. This phenomenon is used to separate the input and output beams in regenerative amplifiers. This effect's "figure of merit" is inversely proportional to the absorption coefficient and can be tuned by doping in rare earth garnets like yttrium iron garnet or terbium gallium garnet. This effect is the theoretical basis behind optical isolators. This effect can be derived by solving the equation of motion for an electron in a longitudinal field and noting that the result contains two terms which correspond to left-handed and right-handed circularly polarized light waves travelling at different phase velocities. The strength of this effect is equal to the product of the path length, the B-field strength, and the Verdet constant. For 10 points, name this magneto-optic effect in which a linearly polarized light beam traveling in a region with a magnetic field undergoes rotation of its plane of polarization.

ANSWER: **Faraday** effect [or **Faraday** rotation]

6. A member of this organization, Christine Kubly, was arrested for obtaining a forged prescription at a drug store. As part of a deal in which the government sent millions in developmental aid, six members of this group were offered sanctuary in South Yemen, but one refused to go. The actions of this organization prompted the Tübingen Congress. This group dispatched a letter signed by a man called "Commando Martyr Halimeh," and organized a protest of the nuclear power plant at Wyhl. This group later merged with the 2nd of June Movement. One of its founders wrote the film *Bambule*, and allegedly committed suicide during the so-called "Death Night" while being detained at Stammheim Prison. That founder wrote this group's manifesto *The Concept of the Urban Guerilla*, and operated this group during a period called the German Autumn. For 10 points, name this West German terrorist group founded in 1970, often named for two of its leaders.

ANSWER: **Red Army Faction** [or **RAF**; or **Baader-Meinhof** Gang/Group; or **Rote Armee Fraktion**]

7. In the *Thebaid*, Statius writes that Eteocles possessed one of these objects on which he had flung numerous limbs. In the *Heroides*, Ariadne states that she “bedewed” one of these objects with “pouring tears” and calls a “faithless” one of these objects the “greater part of my being.” After telling a story about one of these man-made objects, a character states that he must eventually venture out to ensure his own peaceful death by sacrificing a ram, a bull, and a boar and planting an oar. A man who kept one of these items in his stronghold on Mount Korydallos was the last bandit killed on Theseus's journey to Athens. In the *Odyssey*, Eurycleia is asked to move one of these objects, which leads Odysseus to prove his identity to Penelope by telling her a story about how he built it out of a still-living tree. For 10 points, Procrustes forcibly shortened or lengthened his victims so they fit onto what objects?

ANSWER: beds [accept cots]

8. A namesake of this algorithm generalized it to devise the out-of-kilter algorithm. The super-complex, probably never-implemented Orlin’s algorithm works by starting with the theorem this algorithm proved and combining black boxes to achieve a runtime improvement of “big O of E times V.” Uri Zwick was the first to show that this algorithm will never terminate for some inputs that are irrational numbers. By using the correctness proof of this algorithm—which only works on so-called “one-commodity” problems—one can derive the integrality theorem, which states that if all capacities are integers, then each component of the solution being sought will be integer valued. The Edmonds-Karp algorithm works by combining this algorithm with a breadth-first search and using a residual network. The first algorithm for computing the maximum flow of a graph was, for 10 points, what algorithm named for its two devisers?

ANSWER: Ford-Fulkerson algorithm

9. In the *Italian Journey*, Goethe described seeing this painting and wrote this artwork’s creator “was like Nature” in that he was “always right.” Most scholars believe that the two figures on the upper left of this painting are Saints Justus and Pastor, two child martyrs. Along with Sebastiano del Piombo’s *The Raising of Lazarus*, this painting was supposed to function as an altarpiece for Narbonne Cathedral. Its artist died on Good Friday before he could complete this painting, which led some scholars to argue that his students Giulio Romano and Gianfrancesco Penni completed it. The bottom right of this painting depicts the moment before Jesus heals an epileptic boy. Its central figure is depicted floating with the prophets Moses and Elijah on Mt. Tabor. For 10 points, name this large Raphael painting that depicts a miracle in which Jesus becomes radiant.

ANSWER: *The Transfiguration of Christ*

10. In one of this author’s stories, a castle made of glass, a glass beehive, and a tree of life made of glass are used by the “desert prince” Sasan to woo the “Arctic princess” Fiammarosa. Philip Warren enters the “Purchase House” and becomes the apprentice to the eccentric potter Benedict Fludd in a novel by this writer. This author included “Cold” and other “stories of ice and fire” in her collection *Elementals*. This author created the character Leonora Stern, a lesbian scholar from Tallahassee who tries to seduce a woman by smothering her. A 2009 novel by this author about the Wellwood family is titled *The Children’s Book*. In another of her books, the burgeoning romance between the scholars Roland Michell and Maud Bailey parallels the historical relationship between the poets Christabel LaMotte and Randolph Henry Ash. For 10 points, name this author of *Possession*.

ANSWER: Antonia Susan Byatt [or A. S. Duffy]

11. In the 1980s, Willem Nijenhuis argued that Hadrian Saravia was the only Elizabethan-era philosopher to articulate this doctrine. Scholarly interest in this doctrine was revived in the 19th century with John Figgis's intellectual history of it, a book that grew out of a debate he had with John Allen, who argued it was misconstrued with the right of discretion. Ernst Kantorowicz argued that this right was derived from the second of a certain person's "two bodies" in a 1957 book which makes reference to Richard Hooker, who rejected this doctrine in Book 8, Chapter 3 of his magnum opus. A treatise defending this doctrine states that Adam was the first ruler and that the first rulers were fathers of families. That book defending this doctrine, Robert Filmer's *Patriarcha*, was attacked by John Locke in his *First Treatise on Government*. For 10 points, name this doctrine which asserts that monarchs derive their authority from God.

ANSWER: **divine right** [or **jure divino**; or **divine right** of kings; or **divine right** of bishops]

12. One class of reagents used to synthesize this functional group can interconvert between uronium and guanidinium forms. EDC, HATU, and hydroxy-benzo-tri-azole are used to synthesize this functional group via a coupling reaction. One variant of this functional group is characterized by a methyl and a methoxy substituent, which allows them to selectively form ketones via nucleophilic substitution by organometallic reagents due to chelation with the methoxy group. The bromination of this functional group results in its decomposition into an amine via an isocyanate intermediate in the Hofmann rearrangement. This functional group is formed via a condensation reaction between a carboxylic acid and an amine. For 10 points, name this functional group which is found between amino acids in peptide bonds, and consists of a nitrogen atom adjacent to a carbonyl.

ANSWER: **amides** [or Weinreb **amides**, do NOT accept or prompt on similar-sounding answers like "amines," "imides," or "imines"]

13. This general's subordinate Paul Bentalou wrote an essay about this man "Vindicated from an Unsupported Charge," which claims he died of gangrene on a ship called the *Wasp*. Joseph Reed wrote a letter demanding this general be stripped of his command after his troops plundered supplies from citizens in Pennsylvania during his march to Georgia. A force under this general defended the iron works at Batsto, but his lieutenant Gustav Juliet betrayed him, leading 50 of his men to be killed as they slept in the Little Egg Harbor Massacre. A Civil War fort on Cockspur Island named for this man commemorates his death during the Siege of Savannah in 1779. He was originally a member of the Confederation of Bar, but had to flee after being implicated in a plot to abduct Stanislaw II. For 10 points, name this man given the special title "Commander of the Horse" by George Washington, a Polish general dubbed the "Father of the American Cavalry."

ANSWER: Count Casimir **Pulaski** [or Kazimierz Michal Wladyslaw Wiktor **Pulaski** of Slepowron]

14. A section of this book describes the “coloured woman” Zilpha, who shouts “Ye are all bones, bones!” after her house is burnt down. In the last section of this book, the author suggests that “it is not worth the while to go round the world to count the cats in Zanzibar” after imploring the reader to be “the Mungo Park, the Lewis and Clark, and Frobisher of your own streams”. That section of this book concludes “there is more to day than dawn. The Sun is but a morning star.” During a rainstorm, the narrator of this book stays in the house of the Irishman John Field, whom he tells “I did not work hard.” Conversations with the poet Ellery Channing comprise its piece “Brute Neighbors,” while a poem called “The Pretensions of Poverty” ends its first section “Economy,” which sums up the costs of building a house near the title body of water. For 10 points, name this book by Henry David Thoreau.

ANSWER: Walden; [or Life in the Woods]

15. This film’s protagonist states that his principles will not allow him to take a direct part in blood sports when he goes out shooting with his relative Ethelred. After its main character is dismissed from his job as a draper, he gains employment as a banker's assistant after writing a letter to his grandfather. After its protagonist kills a suffragette in a balloon, he quips “I shot an arrow in the air. She fell to earth in Berkeley Square.” This film, whose title comes from Tennyson's "Lady Clara Vere de Vere", is narrated by a man whose mother marries an opera singer who is subsequently disowned by her family. After being made duke, its protagonist is tried for killing Lionel, and is convicted by perjured testimony from her former lover Sibella. For 10 points, name this Ealing comedy in which Louis Mazzini murders the members of the D’Ascoyne family, who are all played by Alec Guinness.

ANSWER: Kind Hearts and Coronets

16. The *Kukas* religious group do not believe this action happened; instead they believe the man who supposedly performed this action secretly lived until 142 and dictated his wisdom to Balak. Narbud was the name of the witness to this action, and he recorded a text beginning “Maneyo” onto a scroll about it. The *Namdhari* heretics do not believe that this action happened. It took place shortly after the man who performed it used his *talwar* to fend off the two *Pashtuns* Jamshed Khan and Wasil Beg, a pair of assassins sent by Wazir Khan. This event occurred while a mortally wounded enemy of Aurangzeb sang a self-composed hymn stating that “those who want to meet God” can find him in the “pages” of a certain object. This action is the reason why a *takhat*, or elevated throne, houses a certain document in all *gurdwaras*. For 10 points, name this action performed by Gobindh Singh near his death, which made a certain holy text the next Sikh leader.

ANSWER: making the Adi Granth a guru [accept answers indicating that the next guru is Guru Granth Sahib]

17. One protein produced by these cells can use nitrite to nitrate proteins at tyrosine residues. These cells produce a ribonuclease called their namesake “derived neurotoxin.” Levels of these cells are elevated in a vasculitis known as Churg-Strauss syndrome. High levels of these cells are present in a form of drug hypersensitivity known as DRESS syndrome. White exudates and a series of Schatzki rings visible during endoscopy are characteristics of a disease in which these cells build up in the epithelium of the esophagus. Levels of these cells are considered elevated above 450 cells per microliter. These cells produce a namesake peroxidase and major basic protein. Like a rarer cell type, they possess a bilobed nucleus. Degranulation of these cells occurs in various anti-parasite and inflammatory responses. For 10 points, name these white blood cells which stain red in the presence of a certain acidic dye.

ANSWER: eosinophil granulocytes [or acidophil granulocytes, prompt on “granulocytes,” “leukocytes” or “white blood cells”]

18. At one point in this book, the author cites the example of Jerry Long, a 17-year old from Texas who broke his neck in a diving accident, to illustrate the Latin terms *argumenta* and *hominem*. In the second part, the author gives a “Critique of Pan-Determinism,” which he claims is an even more dangerous position than pan-sexualism. This book ends with the postscript “The Case for a Tragic Optimism,” and argues that, since freedom will degenerate into arbitrariness unless lived responsibly, the Statue of Liberty on the East Coast should be supplemented by a Statue of Responsibility on the West Coast. This book, in which its author defines his idea of “noogenic neuroses,” was first published with the title *Nevertheless Say Yes to Life*, then re-released in 1959 as *From Death-Camp to Existentialism*. This work became the foundation of the “Third Viennese School” of psychotherapy. For 10 points, name this “introduction to logotherapy” written by Holocaust survivor Viktor Frankl.

ANSWER: *Man’s Search for Meaning* [until the first word of these titles is read, accept them: *From Death-Camp to Existentialism* or *Nevertheless Say Yes to Life*; or *trotzdem Ja zum Leben sagen: Ein Psychologe erlebt das Konzentrationslager*]

19. In a scene in this play, the title character is told “If thou eat his tongue, thou wilt become a monstrous clever talker.” In this play, the hero offers to trade a drink procured from Maron for cheese and sheep flesh, but the character giving it to him later claims that the hero was stealing it. After getting monstrously drunk, the title character refers to another character as “my Ganymede” before presumably raping him offstage. This play opens with a character raking away the leaves in front of a cave, talking about how he once slew Enceladus alongside his master. This play is a reworking of Book IX of *The Odyssey* and adds in a chorus of creatures who are Dionysus’s servants, as well as Silenus, who almost has Odysseus killed by Polyphemus. For 10 points, name this burlesque by Euripides in which Odysseus blinds the title creature, the only fully extant satyr play.

ANSWER: *The* *Cyclops* [or *Kyklōps*]

20. A leader in this country rose to power as a clerk at the San Albino gold mine, where he amassed an army and led a raid to dynamite La Luz Mining Company. After two engineers named Lee Roy Cannon and Leonard Groce were executed in this country, a period of crisis erupted in which minister of war Luis Mena was arrested, leading to the bombing of Fort Loma. The aforementioned rebel leader in this country refused to sign the Pact of Espino Negro, and launched a guerilla war against President Adolfo Diaz, prompting the rise of the National Guard under a man with the nickname "Tacho." After this nation's ports of Corinto and Bluefields were occupied by troops, it was made a protectorate by the Bryan-Chamorro Treaty of 1916. For 10 points, name this Central American nation where the Somoza family rose to power in the wake of US occupation, and were later opposed in this country by the Sandinistas.

ANSWER: Republic of **Nicaragua**

Tiebreaker: The outbreak of this conflict was spurred by correspondence called the Letters from the Segovia Woods, which refused to abolish heresy ordinances. That correspondence led to the Compromise of Nobles, which attempted to avert this conflict by presenting a petition to moderate placards posted in various cities. This conflict, which was interrupted by the Twelve Years Truce, is often said to have begun with an action called the Beeldenstorm during which a number of convents were ransacked. The leader of one side was assassinated by Balthasar Gérard at dinner. Just prior to outbreak of this war, two other leaders on that side, the Count of Horn and the Count of Egmont, were indicted and executed by the Council of Blood. For 10 points, name this conflict in which William the Silent led a revolt of the Seventeen Provinces against the rule of Philip II of Spain, named because it lasted from 1568 to 1648.

ANSWER: **Eighty Years' War** [or **Dutch War of Independence**; or **Dutch Revolt**; or **Low Countries Revolt**]

**ACF Nationals 2016**  
**Editors' Packet 2**  
**Bonuses**

1. Answer the following about the Pennsylvania Anti-Slavery Society, for 10 points each.

[10] This Virginia-born slave found freedom when he mailed himself to Passmore Williamson, a member of the Vigilance Committee of the Anti-Slavery Society. He later performed in magic shows with his wife and biracial daughter under the name "African Prince,"

ANSWER: Henry Box **Brown**

[10] John Hill Wheeler infamously lost two of his slaves to the society, leading to the first major challenge to the Fugitive Slave Act passed in this year, which also saw the official admission of California to the union as a free state.

ANSWER: **1850** [prompt on "50"]

[10] This mixed-race abolitionist served as president of the society starting in 1850, after having written the "Appeal of Forty Thousand Citizens Threatened with Disfranchisement" and founding the Library Company of Colored People in Philadelphia.

ANSWER: Robert **Purvis**

2. In *The Missing Pieces*, Henri Lefebvre suggests that this novel was unfinished since "there is no end to human stupidity." For 10 points each:

[10] Name this 1863 novel which Julian Barnes called a "vomitorium of pre-digested book learning." Its title characters are a pair of Parisian clerks who "broach the origin of ideas."

ANSWER: **Bouvard and Pecuchet** [or **Bouvard et Pecuchet**]

[10] *Bouvard and Pecuchet* is often published with this short nonfiction work, which humorously defines absinthe as an "extra-violent poison ... that has killed more soldiers than the Bedouin."

ANSWER: **Dictionary of Received Ideas** [or **Dictionary of Accepted Ideas**; or **Le Dictionnaire des idées reçues**]

[10] This French author supposedly read approximately 1,500 books to write *Bouvard and Pecuchet*; he used a much simpler naturalistic tone to write *A Sentimental Education*.

ANSWER: Gustave **Flaubert**

3. This man led opposition to Hasidic Judaism, causing his followers to become known as "mitnagdim," or opponents. For 10 points each:

[10] Name this 18th century rabbi from Lithuania, who was renowned for his prodigious scholarship and his extensive corrections to the text of the Talmud.

ANSWER: the **Vilna Gaon** [or **Gaon of Vilna** ; or Rabbi **Eliyahu** Ben Shlomo Zalman; or the **GRA**; prompt on **Gaon**]

[10] The Gaon of Vilna was a proponent of this action, and his will encouraged his students to carry it out. Performing this action is a major tenet of Zionism and reverses the diaspora.

ANSWER: **aliyah** [or **emigrating to Israel**; or clear equivalents]

[10] The Gaon of Vilna was fond of explaining the *Torah* by using this numerological system, which assigns a value to each letter of the Hebrew alphabet. Kabbalistic scholars use it to find secret meanings in the Old Testament.

ANSWER: **gematria**



4. The Monod-Wyman-Changeux model describes this type of interaction via transition between “tense” and “relaxed” states. For 10 points each:

[10] Name this type of enzymatic regulation in which the regulatory molecule binds somewhere other than the active site.

ANSWER: **allosteric** regulation [or **allostery**; or **allosteric** control; or **allosteric** activation; or **allosteric** inhibition]

[10] An allosterically regulated enzyme with cooperative binding does not display Michaelis-Menten kinetics; instead, this is the shape of the reaction velocity vs substrate concentration curve.

ANSWER: **sigmoidal** [prompt on **logistic**]

[10] In this model of allosteric regulation, the protein’s quaternary structure is not fixed, but instead exists in a dynamic equilibrium between two oligomers, which can be shifted by binding a regulatory molecule to one of the equilibrium states.

ANSWER: **morpheein** model (pronounced morf-ee-in) [if the player gives a pronunciation of “morf-eeen,” ask them to spell their answer to be sure they are not saying “morphine,” which is wrong. They only need to spell the “ee” part correctly - we’re only trying to make sure they know it’s not the drug.]

5. Answer the following non-questions about a Swedish folk instrument, for 10 points each.

[10] This Swedish musical instrument consists of 16 strings and 37 wooden keys that stop the strings. In the early 20th century, Eric Sahlström was responsible for reviving its use.

ANSWER: **nyckelharpa** [or **nyckelharpor**]

[10] The nyckelharpa is similar to this string instrument, which uses a crank and wheel to cause strings to vibrate. The final movement of Schubert’s *Winterreise* depicts a man playing this instrument.

ANSWER: **hurdy-gurdy**

[10] Both the nyckelharpa and the hurdy-gurdy have strings named for this musical technique of playing a melody over a single bass note.

ANSWER: **drone** strings [or word forms, such as **droning**]

6. This poet compared “the dead [who] maintained their ground” to the “endurance of the yews, laurels, moonshine, all tissues” in his poem “The Distant Fury of Battle.” For 10 points each:

[10] Name this author of *King Log*, whose other works include a long poem called *The Mystery of the Charity of Charles Peguy* and the collection *Mercian Hymns*.

ANSWER: Geoffrey **Hill**

[10] Geoffrey Hill’s other works include a selection of “Scenes” from the work named for this character, which was first presented at Ludlow Castle. This trickster binds The Lady to his chair.

ANSWER: **Comus** [or *Scenes from Comus*]

[10] *Comus* was written by this author, whose *A Treatise of Civil Power* inspired a poetry collection of the same name by Hill. This author’s other poems include “Il Penseroso.”

ANSWER: John **Milton**

7. This work begins with a proem, a dedicatory epistle to James I, and a section called “Plan of the Work,” the last of which proposes a six-fold system of knowledge, including a “ladder of intellect” and a “survey of the divisions of sciences.” For 10 points each:

[10] Name this project proposed in 1620 that aimed to reform all of the knowledge known to man in six parts, akin to how God created the world in six days. Only its second portion was ever realized.

ANSWER: *The **Great Instauration*** [or ***Instauratio Magna***]

[10] The only portion of *The Great Instauration* that was completed was this treatise on logic, whose name indicates it updates the title of Aristotle’s treatise on logic.

ANSWER: ***Novum Organum** Scientiarum* [or ***New Instrument** of Science*]

[10] This English philosopher outlined a form of the scientific method in *Novum Organum*.

ANSWER: Francis **Bacon**

8. These people established a capital at Arkona after an expedition demolished their temple at Rethra. For 10 points each:

[10] Name these people once led by the chief Niklot, whose son also led an uprising of these people but was smashed at the Battle of Verchen, after which he founded the monastery at Doberan.

ANSWER: **Wends** [or **Wendish**; or **Obotrites**; or **Winedas**; or **Vindr**; or **Wenden**; or **Vender**; or **Wendowie**; prompt on **Slavs**]

[10] Valdemar I attacked the Wends who inhabited the island of Rugen in this body of water. Saxo-Grammaticus referred to this sea as Grandvik, including its northern arm, the Gulf of Bothnia.

ANSWER: **Baltic** Sea

[10] Under his alternate name of Dagome, this Polish ruler took the title of “King of the Wends.” He established his dominance over Western Pomerania by defeating Margrave Odo and was succeeded by his son Boleslaw the Brave.

ANSWER: **Mieszko** I of Poland

9. The steric factor can be given as the ratio of this quantity for reactive collisions to this quantity for all collisions. For 10 points each:

[10] Name this quantity, which is often given in collision theory using a hard-sphere approximation.

ANSWER: integral **cross-section** [do not accept “differential cross section”]

[10] The product of the steric factor, the total cross-section, and the average speed of the reactant molecules gives this quantity, often symbolized A, which appears as a proportionality constant in the Arrhenius equation.

ANSWER: **pre-exponential** factor [or **frequency** factor, accept the words “term” or “constant” in place of “factor”]

[10] The cross-section given by the hard-sphere approximation is an underestimate of the true cross-section for this reaction mechanism, in which an electron is transferred between the two reactants prior to the collision, enhancing the rate via Coulombic attraction between ions.

ANSWER: **harpoon** mechanism

10. The title of this painting refers to the fact that one or more of its central figures, who are closely observed by a man in a white shirt with rolled-up sleeves, are not actually members of the club depicted. For 10 points each:

[10] Name this 1909 painting, which depicts a boxing match attended by patrons of the title club.

ANSWER: **Stag at Sharkey's** [do not accept "Stag at Sharkey"]

[10] *Stag at Sharkey's* was painted by this member of the Ashcan School, whose non-boxing paintings include the tenement scene *Cliff Dwellers*.

ANSWER: George **Bellows** [or George Wesley **Bellows**]

[10] George Bellows, like fellow Ashcan artist Arthur Davies, worked on illustrating this socialist magazine. Its editor Art Young was the first critic to apply the term "Ashcan" to painting.

ANSWER: *The* **Masses**

11. This primeval maiden spends centuries swimming around the vast World-Ocean for years until she becomes lonely and bored. For 10 points each:

[10] Name this "Virgin goddess of the air" who wanders for seven centuries after becoming pregnant by the East Wind.

ANSWER: **Ilmatar**

[10] Ilmatar is the mother of this hero of *The Kalevala*, who ends the epic by sailing away from Finland, suggesting the end of Nordic paganism.

ANSWER: **Vainamoinen** [or **Wainamoinen**]

[10] During her wanderings, a teal lays seven eggs on Ilmatar's knee. Six of them are golden, while the seventh egg is iron, contains a black yolk, and becomes the first one of these things.

ANSWER: thunder**storm** [accept **thunderclouds** or **storm clouds**; prompt on clouds]

12. The Australian anthropologist Michael Taussig wrote a book titled for mimesis and this concept. For 10 points each:

[10] Name this concept defined as the state of being other or different, which can refer to the construction of other cultures. Jean Baudrillard and Marc Guillaume wrote a work translated in 2008 titled for the radical form of this concept, which he claimed was in danger of getting lost in our system.

ANSWER: **alterity** [or **Mimesis and Alterity**]

[10] In a 1989 essay, this thinker asked "Who claims alterity?" and discussed the appropriation of history. She's currently translating letters between Antonio Gramsci and the Schuchts sisters, but remains best known for her 1983 essay "Can the Subaltern Speak?"

ANSWER: Gayatri Chakravorty **Spivak**

[10] This neo-Freudian psychoanalyst from France created an example of alterity with his concept of the "mirror stage" where a child struggles and fails to reconnect with the "ego ideal."

ANSWER: Jacques [Marie Emile] **Lacan**

13. Applying this result to the product of the ladder operators for the quantum harmonic oscillator allows the second term to be simplified to just one-half. For 10 points each:

[10] Name this result from quantum mechanics, which states that a certain operation applied to two conjugate variables, such as position and momentum, gives  $i$  times  $\hbar$ .

ANSWER: canonical commutation relation [or canonical commutator; or CCR, do NOT accept or prompt on partial answers]

[10] The fact that position and momentum do not commute explains this statement, which can be mathematically stated as the product of the standard deviation in position and momentum is greater than or equal to  $\hbar$  over two.

ANSWER: Heisenberg uncertainty principle [prompt on Heisenberg principle]

[10] This theorem states that any two irreducible representations of the canonical commutation relation are unitarily equivalent, which implies that the Schrodinger representation defined by the canonical commutation relation is unique.

ANSWER: Stone-von Neumann theorem [accept names in either order; prompt on Stone's theorem; do not accept or prompt on "von Neumann's theorem"]

14. This woman observes Bishop Morehouse giving a speech about how the church has adopted "Mammon" in place of Christ, before he is sent off to a mental asylum. For 10 points each:

[10] Identify this fictional author, who lives in a secret hiding place in Sonoma, working on a manuscript detailing the actions of her husband Ernest.

ANSWER: Avis Everhard [accept either underlined portion]

[10] Avis Everhard's manuscript forms the text of this novel, whose fictional introduction by Anthony Meredith states that the "Brotherhood of Man" has triumphed over the title entity.

ANSWER: *The Iron Heel*

[10] *The Iron Heel* and *The People of the Abyss* are socialist books by this author, who may be better known for writing *The Sea Wolf* and *White Fang*.

ANSWER: Jack London [accept John Griffith London or John Griffith Chaney]

15. The earliest excavated example of one of these sites was Kahun, dug up by Flinders Petrie. For 10 points each:

[10] Name this kind of site, the most well-documented of which is Deir el-Medina, which worshipped the patron deity Meretseger and was unearthed by Bernard Bruyère. Deir el-Medina served this purpose for approximately 450 years.

ANSWER: workers villages [or artisans village, accept any answer implying towns used by workers or builders to construct royal temples and pyramids, etc. Prompt on villages or towns]

[10] The pyramid at el-Lahun, or Kahun, was designed for the second pharaoh of this name, who also built a great dike there. Except for its last female ruler Sobekneferu, the entire Twelfth Dynasty consisted only of pharaohs with this name or Amenemhat.

ANSWER: Senusret [pron. Sen-wos-ret]

[10] The workers at Deir el-Medina established a camp overlooking the mortuary complex of this queen, which they used to gather water. She ruled as co-regent with the child pharaoh Thutmose III.

ANSWER: Hatshepsut [or Hatchepsut]

16. In the preface to this work, one of its authors wrote that contemporary writers should choose between “Windows 95 and Macintoshes” instead of choosing between “guns and pens of previous generations.” For 10 points each:

[10] Identify this 1996 anthology of short stories edited by Sergio Gomez and Alberto Fuguet, which only includes authors born after 1960. It sought to combat the trend of magic realism in Latin American literature.

ANSWER: **McOndo**

[10] *McOndo* was a reaction against the magic realism of this movement in Latin American literature, which Fuguet called “a sort of curse that has afflicted novelists, filmmakers, and tour guides all over the Americas.”

ANSWER: Latin American **Boom**

[10] An author from this country, Jorge Volpi, published the “Crack Manifesto” as a protest against the Boom. *The Hydra Head* and *The Old Gringo* were written by one of this country’s Boom authors, Carlos Fuentes.

ANSWER: **Mexico** [or the **United Mexican States**]

17. According to this text, which was written sometime in between 1925 and 1955, Jesus was “bestowed onto Earth” by the Seventh Commission. Also, Jesus is a fake name and his real name is Michael. For 10 points each:

[10] Identify this text, which holds that Earth is the 606th planet in Satania, a realm within Norlatiadek, which is a realm within Nebadon, which is a realm in Orvonton, which is a “universe” within Havona, which is a “superuniverse” that orbits “God.”

ANSWER: *The* **URANTIA** *Book*

[10] Events in *The URANTIA Book* appear in this composer’s seven-opera cycle *Licht*, one entry of which contains his *Helicopter String Quartet*.

ANSWER: Karlheinz **Stockhausen**

[10] This author debunked the idea that *The URANTIA Book* was written by “superhumans,” instead concluding it was written by former Seventh Day Adventists. He is better known for his “Mathematical Games” columns in *Scientific American*.

ANSWER: Martin **Gardner**

18. A document by this name was confirmed as the constitution of Brabant in 1356, when it was presented to Johanna, the daughter of Duke John III and her husband Wenceslas, the Duke of Luxembourg. For 10 points each:

[10] Name this charter of liberties considered to be the Magna Carta of the Low Countries. It was designed to force the foreigner ruler Wenceslas to abide by traditional freedoms.

ANSWER: the **Joyeuse Entrée** of 1356 [or the **Joyous Entry** or these Dutch words: Blijde Intrede, Blijde Inkomst, Blijde Intocht]

[10] Under Henri van der Noot, Brabant revolted in 1789 when this Holy Roman Emperor tried to abrogate the Joyous Entry. This son of Maria Theresa and Francis I granted religious freedom with his 1781 Patent of Toleration.

ANSWER: **Joseph II** [or Joseph Benedikt Anton Michael Adam; prompt on **Joseph**]

[10] In addition to depicting the Joyeuse Entree, the historian Jean Froissart also depicted this party thrown in 1393 by Isabeau of Bavaria, the wife of Charles VI, for her lady-in-waiting. One of the revelers at this event is shown jumping into a vat of wine in a futile attempt to save his life.

ANSWER: **Bal** des **Ardents** [or “the **Ball** of the **Burning Men**,” or the “**Bal** des **Sauvages**”]

19. The SLA-561V is a type of this technology used by NASA for most Mars missions. For 10 points each:

[10] Give this term, which also applies to a type of “heat shield” often used on spacecraft during atmospheric re-entry, in which certain heat-dissipating resins fall away as they are vaporized.

ANSWER: **ablative** [or **ablation**; or **ablative heat shield**]

[10] In the mesosphere, a layer comprised of un-ionized forms of this element’s atom is thought to be formed by meteor ablation. That layer of this element was first discovered by Vesto Slipher.

ANSWER: **sodium** layer [or **Na**]

[10] Calving of these structures, in which chunks of ice break off, is a form of ablation. Cirques are formed by the erosion induced by these structures.

ANSWER: **glaciers**

20. Answer the following about ETA Hoffmann’s influence on classical music, for 10 points each.

[10] In an influential review of this piece, Hoffmann wrote that it “irresistibly sweeps the listener into the wonderful spirit-realm of the infinite.” Hoffmann also praised this piece in a review of its composer’s instrumental music, in which he called music “the most romantic of all the arts.”

ANSWER: Ludwig van **Beethoven**’s **5th** symphony

[10] A character created by Hoffmann inspired this composition, which consists of eight “fantasies” for solo piano. After its opening piece in D minor, it alternates between pieces in B flat major and G minor.

ANSWER: **Kreisleriana**

[10] *Kreisleriana* was written by this German composer, whose *Scenes from Childhood* includes one of his most famous pieces, “Traumerei.”

ANSWER: Robert **Schumann**