



ACADEMIC  
COMPETITION  
FEDERATION

**ACF NATIONALS 2019**

**PACKET 8**

**Packet by**

**Illinois A + Wright State A**

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## Tossups

1. This country's navy was destroyed during Operation Safari. Leaflets titled "OPROP!" were dropped over this country to justify its invasion as a means of protecting this country from the British. The HIPO Corps were established under its governor Werner Best to root out dissidents in this country. Cecil von Renthe-Fink lost his highest position because this country's head of state sent a perfunctory letter to another leader during the Telegram Crisis. The Red Cross and this country organized "white buses" to help concentration camp victims escape. During its occupation by its southern neighbor, this country was referred to as the "model protectorate." This country's king, who announced his surrender at Amalienborg Castle, legendarily wore a Star of David to protest Nazi occupation of his country. For 10 points, name this country, whose king Christian X surrendered to Nazi Germany in April 1940.

ANSWER: **Denmark**

<European History>

2. The founder of *this school* once said that a mufti should have memorized 500,000 hadiths before issuing independent judgements. Followers of this school point one finger but do not move it when Allah is mentioned in *tashahhud*. A theologian in this school was criticized by Taqi al-Din for his belief in the temporal punishment of Hell. That scholar of this school was imprisoned in Damascus because he argued against visiting graves. The beliefs of this school's founder were collected by his student Abu Bakr al-Khallal, and ibn Taymiyyah was a later scholar of this school. This madhhab supplanted the Zahiri school as the fourth most popular fiqh. Wahhabi Muslims most closely follow this variety of jurisprudence. For 10 points, name this conservative school of Sunni Islam jurisprudence that is used heavily in Saudi Arabia.

ANSWER: **Hanbali**

<Religion>

3. This photographer highlighted sweat dripping down the bare chests of two gold miners in one of the first widely-seen images of apartheid South Africa. A grinning man slings an axe over his shoulder as the hand of an unseen man holds up a severed head in an image by this photographer. Alfred Eisenstaedt documented this photographer's treatment for Parkinson's disease, the subject of the autobiography *Portrait of Myself*. After surviving a helicopter crash, a torpedoing, and a stranding in the Arctic while on assignment, this photographer was nicknamed "the Indestructible." Emaciated men stand behind barbed wire in the best known of this photographer's images of the Allied liberation of Buchenwald. This woman's photograph of the construction of Fort Peck Dam graced the first cover in the history of *Life* magazine. She interviewed her best-known subject hours before his 1948 assassination. For 10 points, name this first female war correspondent, who photographed Gandhi at his spinning wheel.

ANSWER: Margaret **Bourke-White** [accept **Maggie the Indestructible** until "the Indestructible" is read]

<Other Fine Arts>

4. These objects can be described by four complex parameters that can be placed in a two by two matrix often symbolized  $Q$  and constrained to have determinant of one. The relativistic motion of these objects is divided into planar motion and motion where the four-velocity remains proportional to a Killing vector field. In special relativity, all possible motions of these objects can be classified using the Herglotz-Noether theorem, while in the non-relativistic case, transformations of them can be represented by the Cayley-Klein parameters or the group  $SO(3)$ . In special relativity, the orthogonal space time distance between any two curves on these objects must remain constant according to a definition named for Max Born. In a rotating reference frame, these objects can be described in terms of applied torques, an inertia matrix and the angular velocity. Euler's rotation equations govern these objects, which must have a constant distance between any two constituent points regardless of external forces. For 10 points, name this type of object that undergoes negligible or zero deformation.

ANSWER: **rigid** bodies [or **Born rigid** bodies]

<Physics>

5. A character in this story “liked to account to himself for practically everything” that comes in his way, including a scorpion he finds drowned in his inkwell. A character in this story twice mentions that his father is a parson in Norfolk and tries to picture himself as a criminal in front of a jury after putting on a gray sleeping suit identical to the narrator’s. Towards the end of this story, the protagonist recognizes his hat floating in the water, signaling that the title character, whom the protagonist calls his “second self,” is gone. The island of Koh-ring is compared to Erebus in this story, in which the protagonist spots the naked title character clinging to a ladder. In this story, Captain Archbold appears looking for his first mate, who had strangled a shipmate during a ferocious storm. This story begins with the protagonist spotting the ship *Sephora* anchored in the Gulf of Siam. The protagonist, an unnamed captain, saves Leggatt in, for 10 points, what short story by Joseph Conrad?

ANSWER: “The Secret Sharer”

<British Literature>

6. Actinic prurigo is an inherited form of polymorphic eruption caused by this phenomenon. Psoralen preferentially adds to the 5-prime-TPA site in the presence of this phenomenon. A minimal erythema dose of this phenomenon varies with the target’s Fitzpatrick’s type; that dose is determined before using this phenomenon to treat mycosis fungoides [fun-GOY-dees] and CTCL. In the HITS-CLIP procedure, which maps genome-wide RNA-protein interactions, this phenomenon is used as a crosslinker. In general this phenomenon is a more specific crosslinker than formaldehyde. It is applied for 30 minutes after using a laminar flow hood. This phenomenon triggers the formation of actinic keratoses. Patients with xeroderma pigmentosum are exquisitely sensitive to this phenomenon; that disease causes an impairment in base excision repair, which removes pyrimidine dimers created by this phenomenon. For 10 points, name this form of radiation with wavelength between 10 and 400 nanometers.

ANSWER: UV light [or ultraviolet light or UV-A or UV-B or UV-C; prompt on light, radiation, or sunlight]

<Biology>

7. Each stanza of a poem inspired by events in this country ends with the line “But the corpse, alas, went on dying” until the last, in which the entreaties of everyone on earth prompt the corpse to get up. The speaker of a poem set in this country anticipates the reader asking “where are the lilacs and the poppy-petalled metaphysics?” and instead invites them to “see my dead house,” where “burning metal flows.” A poet who died deliriously demanding to go this country collected poems about a conflict here in a book whose title asks this country to “Take This Cup From Me.” The exclamation “Come and see the blood in the streets!” is repeated three times at the end of a poem set in this country, “I Explain a Few Things.” A conflict in this country is addressed in several poems of *Residence on Earth*, which was written by the Chilean diplomat stationed here in the 1930s. For 10 points, Latin American poets like César Vallejo and Pablo Neruda sided with the Republican forces during what country’s civil war?

ANSWER: Spain

<World Literature>

8. This composer set a scene from Friedrich Schiller’s play *Demetrius* for alto and orchestra. Stiftung Niedersachsen hosts a triennial competition in Hanover named for this composer for players of his primary instrument. Ferdinand David and this composer both helped Max Bruch revise a concerto in G Minor which he premiered at age thirteen, conducted by Felix Mendelssohn. This musician who wrote a concerto “in the Hungarian Style” orchestrated Schubert’s Sonata in C Major for two piano four hands, nicknamed “Grand Duo.” With cellist Robert Hausmann, this violinist inspired an A minor double concerto for violin and cello, the only double concerto by a certain composer. This violinist composed a cadenza for a work that he premiered alongside Beethoven’s Violin Concerto. For 10 points, name this Hungarian violinist who premiered the Violin Concerto in D Major by Johannes Brahms.

ANSWER: Joseph Joachim

<Music>

9. The Cambridge “companion” to this thinker contains an essay by Peter Wunderli describing how this man spent the last seven years of his life filling notebooks with rigid theories of the anagrammatic foundation of Latin poetry. A 1987 book on “reading” this man, a 1988 book comparing him to Ludwig Wittgenstein, and a 1983 translation of his major work were all produced by Roy Harris. This thinker contrasted the 8:45 Geneva-to-Paris train, which is considered the “same” regardless of the day, with a stolen suit, which is always different from any similar suit, in a discussion of “identity” that inspired Jean-Paul Sartre. Two students of this thinker, Charles Bally and Albert Sechehaye, compiled his lecture notes into a book that theorized “synchronic” and “diachronic” approaches to its title subject. For 10 points, name this thinker who conceived of the “signifier” and the “signified” in his *Course in General Linguistics*.

ANSWER: Ferdinand de Saussure

<Social Science>

10. *Two answers required.* Terrorists from one of these two large countries targeted a city that was *then* part of the other in the Macdonald House Bombing. During Operation Claret, Walter Walker ordered scouts to lead border raids from one of these two countries into the other. A.M. Azahari was encouraged by a leader of one these two countries to lead the TNKU in a revolt that sought to prevent Azahari’s country from joining the other of these two countries. When the United States attempted to impose sanctions on one of these two countries to prevent it from invading the other, the sanctioned country’s leader said “To hell with your aid!” The phrase “*Ganyang* [one of these two countries], *Tindakan* [the other]” became popular during a 1960s war fought between them. Peace talks between these two nations began following the 30 September Coup in one of them. For 10 points, name these two Southeast Asian countries that fought each other in the Konfrontasi over control of Borneo.

ANSWER: Indonesia and Malaysia

<World History>

11. In a novel by an author with this surname, the protagonist is disgusted by the sour cream his wife uses as makeup and is startled by the clawed feet of his father-in-law, who also has light-emitting eyes. An author with this surname wrote a novel in which Mars’ melting polar ice caps threaten a race that originated from Atlantis. An author with this surname wrote a novel in which Benedikt, whose only mutation is his tail, uses his job as a Sanituron as an excuse to transcribe “Oldenprint” books that survived an apocalypse called “The Blast.” In a novel by an author with this surname, the protagonist uses numerology to determine that he is destined to kill the Antichrist, whom he identifies as an invading general. The authors of *The Slynx* and *Aelita* are related to an author of this surname who railed against the Great Man theory of history in the epilogue of a novel whose protagonist loves Natasha Rostov. For 10 points, give this surname of the author who wrote about Pierre Bezukhov in *War and Peace*.

ANSWER: Tolstoy [accept Natalia Tolstaya, Nikolai Tolstoy, or Leo Tolstoy]

<European Literature>

12. M.L. Daneel’s research focuses on the religion of these people. Similarities between the fertility god Muali and these people’s supreme deity, Mwari, supports Tabona Shoko’s hypothesis that these people originated from a place they refer to as Guruuswa. Francisco Barreto led an expedition against these people to capture their reputed mines in Manica. R.N. Hall attributed his discovery of fragments of Chinese pottery at one of these people’s cities as evidence that Muslim merchants from the Swahili Coast resided there. The founder of these people’s Rozwi Dynasty, Changamire Dombo, defeated the Portuguese at the Battle of Maungwe. Karl Mauch erroneously posited that a settlement built by these people was meant to replicate the palace of the Queen of Sheba. That settlement founded by these people contained eight soapstone birds. For 10 points, name these Bantu people who founded the medieval city of Great Zimbabwe.

ANSWER: Shona people [prompt on Bantu people before it is read]

<World History>

13. This essay argues that Hume is a great philosopher even though he reaches his conclusions by sophistry because, unlike Joseph Butler, he thereby opens up interesting problems. This essay uses the long-term dominance of Christianity to explain the persistence of notions like “illicit,” which has no corresponding notion in Aristotle. This essay opens by stating three theses, one of which is that the concepts of “obligation” and “duty” are survivals which should be abandoned, and another of which is that there is little significant difference among English-language thinkers from Sidgwick to the present. Like this essay, the essay “On Brute Facts” by the same author includes an example about owing money to a grocer for potatoes. This paper coined the term “consequentialism.” For 10 points, name this essay often credited with inspiring the contemporary revival of virtue ethics, written by G. E. M. Anscombe.

ANSWER: “**Modern Moral Philosophy**”

<Philosophy>

14. This substance was used to make toiletries featuring ridiculous exclamation-laced slogans praising “Rabbi Jesus” and “Rabbi Hillel” by the “magical” man Emanuel Bronner. According to a 14th-century legend, after this substance was used by two men in a town whose name translates as “forty springs,” those two men were found dead with their bodies intertwined. The town of Castile is renowned for making cleaning products from this liquid, which plays a key role in an activity whose practitioners don a pair of trousers traditionally made from water buffalo, called *kisbet*. This liquid is used extensively in the Kirkpınar, a contest which has been held in the city of Edirne every year since 1346. This liquid is liberally applied to the body in Yagli Gures, a form of wrestling considered the national sport of Turkey. If chemical means are used to handle the pomace leftover by producing this substance it is classified as “crude,” whereas if only mechanical means are used, then it is classified as “virgin.” For 10 points, what popular oil is derived from a small Greek fruit?

ANSWER: **olive oil** [prompt on oil]

<Other Academic>

15. A 2014 paper by Stefan Dziembowski et al. introduced a method of achieving this status by writing numerous “plots” onto hard disc, and searching the hard disc for the plot that matches a “header.” The Slasher protocol achieves this status in part through random assignment and timestamps, but it was rejected for use by Vitalik Buterin, who called finding an efficient method to achieve this status “one of the most complex problems” of the day. In the most-common method for achieving this status, the result is added to the end of a Merkle Tree; in that algorithm for achieving this status, the first computer to match the output of a hash function--usually SHA-256--is rewarded for determining it. Theoretically, this status could be “faked” with a Sybil attack if an agent owns more than half of the nodes that manage a ledger. Both proof-of-stake and proof-of-work algorithms are used to reach, for 10 points, what state on blockchain systems in which a set of distributed processes agrees on the result of some computation?

ANSWER: **consensus** [prompt on verifying a solution to a Blockchain problem]

<Other Science>

16. Jerome Charyn’s book titled for this object presents its creator “for the 21st century.” This object is held to be the “reverse image” of a “pink, lank, and warm” worm in a book that claims it represents the author as a “denatured vampire, a masculine maker of sadistic poetic speech.” Susan Howe’s best-known book is largely devoted to analyzing the poem featuring this object, which she argues was inspired by Thomas Higginson’s account of Nat Turner’s rebellion. This object’s “Vesuvian face” and “Yellow Eye,” as well as its voice that makes the “Mountains straight reply,” are analyzed in the last chapter of Camille Paglia’s *Sexual Personae*. The poem titled for this object ends with the speaker declaring, “I have but the power to kill / without the power to die.” In the poem about this object, it rested “in corners” until “The Owner passed - identified - / And carried Me away.” For 10 points, the speaker’s life is compared to what “loaded” object in an Emily Dickinson poem?

ANSWER: the loaded **gun** [accept anything indicating the title object of the poem “My Life had stood - a Loaded **Gun**”]

<American Literature>

17. In one of these artworks, the Virgin and Child appear in a Gothic cathedral that is connected via an enormous window to a private chapel in which a woman sits with a dog in her lap, reading a book. In one of these artworks, a cut-away view of a hut reveals a man and a woman warming their exposed genitals beside a fire. The list of the approximately seven surviving "black" artworks of this kind that have been partly or fully soaked in dark dye sometimes includes an example of them named for Mary of Burgundy. An artist known as "Hand G," who may be Jan van Eyck, decorated one of these artworks named for Turin and Milan, which unusually includes a missal. A lunette depicting the procession of the solar chariot and signs of the zodiac appears above each of twelve illustrations of the months in the best-known example of this genre. For 10 points, a "very rich" example of what genre of illuminated manuscript was created for the Duke of Berry by the Limbourg brothers?

ANSWER: Book of **Hours** [or **Heures**; or **Stundenbuch**; prompt on illuminated manuscript before mentioned; prompt on labors of the months or miniature or illustration by asking "what type of larger work is it from?"; the lead in is from the *Hours of Marie of Burgundy* and the second clue is from *Très Riches Heures du Duc de Berry*]  
<Painting and Sculpture>

18. Newsboys donated over 19,000 pennies to create a statue of one of these figures that was the dedicatee of a song by Edna Bell Seward titled "Laddie Boy, He's Gone." A Yoichi Okamoto photo caused controversy for depicting its subject doing violence to the ears of one of them. A speech given at a Teamsters' banquet notes how "I don't resent attacks, and my family doesn't resent attacks, but" one of these figures does. Thomas Dewey alleged that taxpayer money was wasted to rescue one of these figures stranded on the Aleutian Islands. In a speech, a politician described receiving a message from Union Station saying that he had received one of these animals in a package. That speech focuses on an allegation made by Peter Edson about campaign finance violations. For 10 points, name these animals which include Checkers, who was owned by Richard Nixon.

ANSWER: presidential **dogs** [prompt on presidential pets]  
<American History>

19. Adrienne Mayor asserts that the Etruscans knew this figure as Chaluchasu, who is shown being defeated by Aphrodite in a mirror now in the British Museum. Apollonius compares this figure to a "monstrous pine tree" and unusually uses the word *aner* to refer to him. Richard Buxton summarizes this figure's appearance in the apocryphal Platonic dialogue *Minos* as "a circuit judge, doing the rounds of [his kingdom] thrice a year." Coins minted in Phaistos depict this figure with wings hurling stones on one side and Laelaps on the other. One legend states that this son of either Oenopion [ee-NOH-pee-on] or Kres was felled by an arrow shot by Poias; other legends recount his propensity for roasting victims alive by hugging them to his chest. This figure was defeated when a bolt was removed from his ankle after he was drugged by Medea. For 10 points, Jason defeated what bronze automaton that once guarded Crete?

ANSWER: **Talos** [or **Talon**; or **Talus**]  
<Mythology>

20. Miguel Molino-Sabio characterized the differences in structure of this material depending on its preparation with iron catalyzed carbon dioxide, uncatalyzed carbon dioxide, or directly with zinc chloride. This substance may be melt spun with pitch to form ACFs. This is the most prominent material characterized by the molasses number. This substance "in pulp" is used in the most common method of extracting gold after cyanidation. Addition of this substance to water treatment protocols is known as PACT. This substance is characterized as powdered or granular depending on the size of the sieve required to retain it, and serves as a common support for catalytic palladium and platinum. This substance is added during recrystallization protocols to remove colored impurities. For 10 points, name this extremely porous substance common produced from charcoal.

ANSWER: **activated carbon** [accept **activated charcoal**]  
<Chemistry>

## Bonuses

1. Belgian literary theorist Jacques Dubois has called this character “Emma Bovary’s proletarian little sister.” For 10 points each:

[10] Name this character who, after losing her laundry-shop, falls into alcoholism and eventually dies alone.

ANSWER: **Gervaise** Macquart [accept **Gervaise** Coupeau]

[10] Gervaise Macquart appears in this novel, where she marries Coupeau after being abandoned by Lantier. It includes a bizarre wedding scene involving a visit to the Louvre.

ANSWER: **L’Assommoir** [accept *The Dram Shop* or *The Drinking Den*; prompt on other titles involving alcohol with “Can you provide the original language title?”]

[10] *L’Assommoir* appears in the Rougon-Macquart series of novels by this author. Other novels in the series include *Le Docteur Pascal* and *La Bête humaine*.

ANSWER: Emile **Zola**

<European Literature>

2. In 2019, Sallie Chisholm was awarded the Crafoord Prize for her discovery of these organisms. For 10 points each:

[10] Name this genus of picoplankton that are the smallest known photosynthetic life forms. Since they are responsible for approximately 5% of the totality of Earth’s energy from photosynthesis, they are a regulator of Earth’s climate.

ANSWER: **Prochlorococcus**

[10] In 2012, Sallie Chisholm publicly debated the Dalai Lama about whether or not to use this metal as a fertilizer to increase the number of *Prochlorococcus* species in the ocean, and thus absorb more carbon dioxide in the atmosphere. In general, this metal rate-limits algae-driven photosynthesis.

ANSWER: **iron** [accept **iron** fertilization]

[10] Chisholm argues against iron fertilization since one of the effects would be the increase of these eutrophic events, in which algae multiply, discolor a water source, and negatively affect its ecosystem. “Red tides” are one kind of these events.

ANSWER: algal **blooms**

<Other Science>

3. Following the violation of the “Shawcross doctrine” affirming the independence of this position, one of its holders was reassigned to be Minister of Veterans Affairs in January 2019. For 10 points each:

[10] Jody Wilson-Raybould allegedly faced pressure from the government to aid the construction company SNC-Lavalin while serving in what position with the Canadian cabinet, which combines two roles? You may name either of the roles to receive points.

ANSWER: Minister of Justice and **Attorney General** [or **Minister of Justice**]

[10] The SNC-Lavalin affair has prompted the resignation of Wilson-Raybould and other members of the cabinet of this current Canadian prime minister.

ANSWER: **Justin** (Pierre James) **Trudeau** [prompt on **Trudeau**]

[10] This former Principal Secretary to Trudeau resigned in February 2019 after being pinpointed by Wilson-Raybould as one of the influencers. As Trudeau’s closest adviser, this former president of World Wildlife Fund Canada played a key role in designing the Liberal Party’s winning 2015 platform.

ANSWER: Gerald (Michael) **Butts**

<Current Events>

4. Answer the following about the food science behind the Impossible Burger, for 10 points each.

[10] The Impossible Burger gets its flavor from this iron containing coordination complex that gives blood its red color. It plays a key role in its namesake "globin" protein.

ANSWER: **heme** [accept **hemoproteins**; accept **hemoglobin**]

[10] Impossible Burger uses this other food additive, a polysaccharide that acts as a thickener and stabilizer, holding the ingredients together. It derives its name, and is commercially produced, from a species of bacteria that causes "black rot" in cruciferous vegetables like broccoli.

ANSWER: **xanthan gum** [the bacteria is *Xanthomonas campestris*]

[10] This Stanford biochemist invented the DNA microarray and studied retroviral integration into the genome, but none of that stuff matters as much his development of the Impossible Burger.

ANSWER: Patrick O. **Brown** [or Patrick O'Reilly **Brown**]

<Other Academic>

5. This ship was captained by William Hutcheon Hull. For 10 points each:

[10] Name this British ironclad, which destroyed fifteen junks at the Second Battle of Chuenpi during the First Opium War. This warship accompanied the *HMS Samarang* and *HMS Atlanta* on the Broadway expedition.

ANSWER: *HMS **Nemesis***

[10] Following China's defeat in the Opium Wars, Empress Cixi promoted the creation of the Beiyang Fleet as part of this movement to adopt modern, Western technology encouraged by Li Hongzhang and Zeng Guofan.

ANSWER: **Self-Strengthening** Movement [or the **Tongzhi** Reforms]

[10] The Beiyang Fleet was destroyed at the 1894 Battle of the Yalu River during a war for control over Korea that China lost decisively against this other country.

ANSWER: **Japan** [or **Nippon**; or **Nihon**]

<World History>

6. T.S. Eliot's essay "Dante" criticizes this phrase as "a serious blemish on a beautiful poem." For 10 points each:

[10] Name this 5 word phrase that Eliot called "meaningless" in a response to I. A. Richards. Cleanth Brooks defended this line as a "speech" given "in character," similar to Shakespeare's "Ripeness is all."

ANSWER: "**Beauty is truth, truth beauty.**"

[10] "Beauty is truth, truth beauty" appears in a John Keats poem titled for one of these objects. Brooks is best known for a seminal work of New Criticism titled for a "well wrought" one of these objects.

ANSWER: **urn** [accept Ode on a Grecian **Urn** or the Well Wrought **Urn**]

[10] The line "What pipes and timbrels? What wild ecstasy" is mocked with the lines "What songs? What gongs? What nameless rites?" in this author's poem "Frascati." He used a line from Tennyson's *Tithonus* to title a novel about millionaire Jo Stoyte.

ANSWER: Aldous (Leonard) **Huxley**

<British Literature>

7. The two-volume treatise *Hyperaspistes* addresses this concept, and considers the hardening of Pharaoh's heart in Genesis 9:12 as an argument against it. For 10 points each:

[10] Name this concept discussed in an Erasmus tract that compares God to an astronomer watching a solar eclipse and prompted a reply by Martin Luther on the same subject.

ANSWER: **free will** [prompt on **freedom**]

[10] Erasmus's concept of the soul as a "middle part" that can freely choose between spirit or flesh recalls a key argument of this Florentine humanist's *Oration on the Dignity of Man*.

ANSWER: Giovanni **Pico** della **Mirandola** [accept either underlined name; prompt on **Giovanni**]

[10] This other Renaissance humanist wrote a dialogue in which Antonio Glarea is convinced of the existence of free will, titled *De libero arbitrio*. This writer used an approach similar to ordinary language philosophy to untangle scholastic errors in *Elegance of Latin*.

ANSWER: Lorenzo **Valla**

<Philosophy>



8. This theory accounts for the difference in size between solvent molecules and polymers in solution. For 10 points each:  
[10] Name this mathematical model that relates Gibbs free energy to volume fractions, mole fractions, and an interaction parameter symbolized chi.

ANSWER: **Flory-Huggins** solution theory

[10] Flory-Huggins theory accounts for the difference in molecule size in its expression for the entropy of this process. A magnetic stir bar may be used to perform this process.

ANSWER: **mixing**

[10] The interaction parameter in Flory-Huggins solution theory can be estimated from this parameter symbolized by a lowercase delta. This parameter is equal to the square root of cohesive energy density.

ANSWER: **Hildebrand** solubility parameter

<Chemistry>

9. A traveler displays his sextant and compass to this city's "Koosh Begee" upon being asked of his scientific prowess in an account by Sir Alexander Burnes. For 10 points each:

[10] Name this city in Central Asia. The Manghit Dynasty ruled an Emirate named for this city in Transoxiana, which was also the capital of the Samanid Dynasty.

ANSWER: **Bukhara**

[10] This Franciscan missionary was sent by Louis IX to explore the extent to which Nestorianism had penetrated the Mongol Empire. His expeditions disproved theories about eastern races posited by Solinus and Isidore of Seville.

ANSWER: **William of Rubruck** [prompt on **William**]

[10] Ruy Gonzalez de Clavijo was sent by Henry III of Castile as an ambassador to this Central Asian city. Clavijo witnessed one of Timur's *kurultays* and the newly-constructed Bibi Khanum Mosque.

ANSWER: **Samarkand**

<European/World History>

10. Two paintings in this genre, Nicolas Lancret's *Morning* and Francois Boucher's *Luncheon*, depict a cup of coffee being served from a silver pot. For 10 points each:

[10] Identify this kind of early 18th century genre scene, often painted by Jean François de Troy, that depicted the manners and dress of the French aristocracy. This three word term is often translated as "paintings of fashions."

ANSWER: **tableaux de mode**

[10] The *tableaux de mode* developed from the *fêtes galantes* invented by this Rococo artist, such as a painting showing pilgrims either departing or arriving at the birthplace of Venus.

ANSWER: (Jean-)Antoine **Watteau**

[10] The first entry in this series by a non-French artist parodies contemporary *tableaux de mode* paintings with the frilly costumes worn by a man with a syphilitic patch on his neck and by the alderman's daughter, who is being consoled by the lawyer Silvertongue.

ANSWER: **Marriage A-la-Mode** [by William Hogarth]

<Painting and Sculpture>

11. This ruler defeated his cousin Frederick of Hapsburg at the Battle of Muhldorf. For 10 points each:

[10] Name this Wittelsbach emperor who invaded Italy while supporting Michael of Cesena against the pope. During that invasion, this emperor installed Pietro Rainalducci as the Antipope Nicholas V.

ANSWER: **Louis IV** [accept **Louis the Bavarian**; prompt on "Louis"]

[10] The twenty-second pope of this name opposed Louis IV and also opposed the Spiritualists, who believed in Christ's absolute poverty. The twenty-third pope of this name absolved Jews for the death of Jesus at the Second Vatican Council.

ANSWER: **John** [accept **John XXII** or **John XXIII**]

[10] A 1329 treaty signed in this city divided Louis' land between himself and Rudolph I. Paul the Deacon worked as a historian in this city when it was the capital of the Lombards, during which it was sieged by Charlemagne.

ANSWER: **Pavia**

<European History>

12. A “pilot study” published in 1953 found that this device can create a “landslide effect” in which a feeling of sentiment appears to become unanimous. For 10 points each:

[10] Kurt Lang and Gladys Engel Lang described the effects of what device in a groundbreaking 1953 sociological paper on “MacArthur Day in Chicago”?

ANSWER: **television** [or **TV**; accept answers indicating **TV** set or similar]

[10] In two 1968 studies, the Langs examined television’s effect on this behavior. A 1944 book co-authored by Paul Lazarsfeld developed the “two-step flow” model of communication to explain why personal contact was more influential on this behavior than radio and newspaper exposure.

ANSWER: **voting** [accept answers indicating participating in **elections**; accept **voting** for president; prompt on “political **campaigning**” or similar answers]

[10] In the 1950s, Frederick Stern and this Nobel Prize-winning economist found no impact on this behavior in Iowa counties with different densities of TV viewership. This longtime Carnegie Mellon professor developed the concepts of “bounded rationality” and “satisficing.”

ANSWER: Herbert **Simon** [or Herbert Alexander **Simon**]

<Social Science>

13. Ring laser gyroscopes use this effect to detect orientation. For 10 points each:

[10] Name this effect, in which light beams traveling in opposite directions around a circular path in a rotating apparatus interfere with each other.

ANSWER: **Sagnac** effect

[10] Georges Sagnac discovered the effect in a 1913 experiment designed to support the existence of this hypothetical medium for carrying light. Unfortunately for him, the results instead lent further support for special relativity.

ANSWER: luminiferous **aether**

[10] For a monochromatic beam, the phase shift induced in the Sagnac effect is proportional to one over the wavelength times the dot product of what two quantities?

ANSWER: the **angular velocity** of the apparatus and the **area** enclosed by the loop

<Physics>

14. Lions, tigers, and serpents emerge to gnaw on the corpses of the fallen at this battle, whose setting is apostrophized as “Ill-starred Thessalia!” For 10 points each:

[10] Name this battle whose outcome is foretold by a dead man raised by the witch Erictho in an epic that ends with a banquet where its victor is beguiled by the Pharaoh’s sister.

ANSWER: Battle of **Pharsalus**

[10] A passage from Lucan’s *Pharsalia* in which Cornelia asks her defeated husband Pompey, “What prompted me to marry you and bring about your fall?” is quoted by Heloise as she takes the veil in this autobiographical work by Peter Abelard.

ANSWER: **Historia Calamitatum** [or **A History of My Calamities**; or **Story of My Misfortunes**; accept “**his**” in place of “my” in either title; prompt on anything mentioning Abelard’s **letters**]

[10] Virgil imagined a farmer turning up rusty javelins at the battlefields of Philippi and Pharsalus near the end of Book I of this agriculturally-themed poem, which he followed up with the *Eclogues*.

ANSWER: the **Georgics**

<World/Other Literature>

15. This composer wrote a three-hundred line poem, which began with "I call you to life, oh mysterious forces!", to accompany his *Poem of Ecstasy*. For 10 points each:

[10] Identify this composer of the *Black Mass* and *White Mass* piano sonatas. This synaesthetic composer, who was influenced by theosophy, intended for his *Mysterium* to be performed in the Himalayas and followed by the end of the world.

ANSWER: Alexander **Scriabin**

[10] In his piece *Prometheus: The Poem of Fire*, Scriabin prominently used his mystic chord, which has an unusual sound in part to its use of these dissonant intervals, such as between C and F-sharp, and between B-flat and E natural.

ANSWER: **augmented fourth** [prompt on "tritone" with "I need the term for just two notes," do not accept or prompt on "perfect fourth"]

[10] The first two movements of this symphony are named "Struggles," which depicted "the conflict between the man who is the slave of a personal god," and "Delight." This symphony's opening motto was taken from Scriabin's unfinished *Symphonic Allegro*, but it may have also been inspired by Richard Wagner's Prelude to *Tristan and Isolde*.

ANSWER: *Symphony No. 3* [accept *The Divine Poem*]

<Music>

16. A chief of this tribe founded the Peyote Religion after the product cured his uncle John of injuries from a bull. For 10 points each:

[10] Name this Native American nation led by Quanah Parker, the son of an American woman, who leased 300,000 acres of land for cattle grazing to his friend Samuel Burnett.

ANSWER: **Comanche**

[10] Quanah Parker led an attack on twenty-eight buffalo hunters holed up in this Texas settlement with the encouragement of the medicine man Isatai'i. The attackers withdrew from besieging this settlement in discouragement after Billy Dixon miraculously shot one of their warriors from a mile away.

ANSWER: **Adobe Walls**

[10] The Comanches were deported to Fort Sill after they lost a war named for this river. A blockade of logs along this river, which forms the Oklahoma-Texas border, was cleared by Henry Shreve in the 1830s.

ANSWER: **Red River**

<American History>

17. One character in this play expresses his desire to see musicals end tragically, stating that he wishes to see "a *Sound of Music* where the entire Von Trapp family dies in an avalanche." For 10 points each:

[10] Name this play centering on eight gay friends who stay at Gregory's house in New York over the summer. Along with the play *Master Class*, this play won its author the Tony Award for Best Play.

ANSWER: **Love! Valour! Compassion!**

[10] In Terrence McNally's play *Love! Valour! Compassion!*, the lively Buzz and the compassionate James suffer from this disease that affects Prior Walter and Roy Cohn in Tony Kushner's play *Angels in America*.

ANSWER: **AIDS** [or **acquired immune deficiency syndrome**; prompt on HIV; prompt on human immunodeficiency virus infection]

[10] This character from *Angels in America* becomes romantically involved with Louis Ironson after drunkenly telling his Mormon mother that he is gay. This man's Valium addicted wife, Harper, leaves for San Francisco at the end of the play.

ANSWER: **Joe** Pitt [prompt on Pitt]

<American Literature>

18. This material transforms into a 30-nm fiber from a 10-nm “beads on a string” structure with the addition of histone H1. For 10 points each:

[10] Name this complex of proteins and chromosomal DNA comes in tightly compact “hetero” and accessible “eu” varieties

ANSWER: **chromatin**

[10] These enzymes, which come in the GNAT and MYST families, modify the lysine groups of chromatin, removing their positive charge and allowing them to be recognized by the bromodomains of transcription initiation factors.

ANSWER: **histone acetyltransferases** [or **HATs**]

[10] The ENCODE project comprehensively mapped these sites on chromatin, which often correspond to cis-regulatory elements adjacent to genes. Because they are particularly accessible to transcription factors, they are vulnerable to cleavage by their namesake enzyme.

ANSWER: **DNase I hypersensitive** sites [or **DHS**; accept any answer containing **DNase** and word forms of hypersensitive, like **hypersensitivity**]

<Biology>

19. Nikolai Rimsky-Korsakov mistakenly believed that this song was an Italian folk song when he included it in his “Neapolitanskaya Pesenka.” For 10 points each:

[10] Name this song by Luigi Denza famously recorded by the Three Tenors. The tone poem *Aus Italien* quotes this song in the “Scenes from Neapolitan life” section.

ANSWER: “**Funiculi, Funicula**”

[10] This composer also thought “Funiculi, Funicula” was an folk song when he used it for *Aus Italien*, for which Denza sued him. Octavian presents a rose to Sophie on behalf of Baron Ochs in this composer’s opera *Der Rosenkavalier*.

ANSWER: Richard **Strauss** [or Richard Georg **Strauss**]

[10] This librettist worked with Richard Strauss on many of his opera including *Der Rosenklavier* and *Ariadne*. Strauss often violently criticized this man’s work, and Arnold Schonberg described one of this author’s letters to Strauss as “in the vein of a jilted girl writing to the man she still loves.”

ANSWER: Hugo von **Hofmannsthal**

<Fine Arts - Other Fine Arts>

20. For 10 points each, name some practices used to worship a certain Hindu deity.

[10] Name this prayer, which is essentially a list that includes such phrases as *vasudevaya* and *keshava*. A section of this prayer based on the Mahabharata contains subsections named after Vaishampayana, Yudhistira, and Bhishma.

ANSWER: **Vishnu Sahasranama** [accept **thousand names of Vishnu**; prompt on **Vishnu**; prompt on **names of Vishnu** by asking “how many are there?”]

[10] Worshippers of Vishnu sometimes decorate their bodies with these markings, which are *not* restricted to the area between the eyes, unlike *bindi*. These markings are made of ash or sandalwood paste and often are shaped like “U’s” with a dot or line in the middle.

ANSWER: **tilaka**

[10] Participants in Holi honor an avatar of Vishnu that takes the form of *this animal* for saving Prahlad from Hiranyakashipu. The avatar in the form of this animal is named Narasimha.

ANSWER: **lions**

<Religion>