

2021 ACF Regionals

Packet I by Oxford B, UNC A, WUSTL D, Kentucky A, Stanford A, Minnesota B

Edited by Jaimie Carlson, Annabelle Yang, Hari Parameswaran, Hasna Karim, Jonathan Tran, Jordan Brownstein, Michael Kearney, Natan Holtzman, Nick Dai, Stephen Eltinge, and Tim Morrison, with contributions from Olivia Murton and Jon Suh

Tossups

1. In support of this leader, William Sayle left his post as Governor of Bermuda to lead an expedition to Preacher's Cave. This leader ordered one of the earliest national surveys, the Down Survey. Robert Venables ("VEN-uh-bulls"), who had served this leader at the Battle of Rathmines, led his campaign to conquer the Caribbean called the "Western Design." After one of this leader's campaigns, his government told the losers they had "to go to Hell or Connacht" in accordance with several Acts of Settlement. Some of this leader's soldiers bludgeoned Arthur Aston to death with his own wooden leg. In one campaign, this leader's troops massacred thousands of Irish civilians at the sieges of Wexford and Drogheda ("DROY-uh-duh"). For 10 points, what "lord protector" emerged victorious in the English Civil War?

ANSWER: Oliver **Cromwell**

<Other History>

2. In 1995, Hawley et al. modeled these structures by solving the MHD equations within a "shearing box" in a rotating reference frame. A negative squared epicyclic frequency leads to magnetic instability in these structures, yielding turbulence described by the Shakura–Sunyaev viscosity model. Persistent super-Eddington radiation can be produced from the gravitational energy of these structures in active galactic nuclei. One of these structures is in contact with the Roche ("rohsh") lobe of a donor body in a cataclysmic variable star, in which it surrounds a white dwarf. When a system has non-negligible angular momentum, infalling mass creates one of these structures instead of a sphere. For 10 points, name these flattened accumulations of matter that can surround massive astronomical bodies.

ANSWER: accretion **disks** [or circumstellar **disks**; prompt on galaxies or active galactic nuclei until "galactic" is read]

<Other Science (Astronomy)>

3. In a poem in this language, two men ambush soldiers by pushing a rickety cheese house on top of them. An author who used the word "pupa" and wrote about a "duel of grimaces" depicted a writer's voyage to Argentina in a semi-autobiographical novel in this language. That novel was written as the "reverse" of an epic in this language in which a man's engagement to Zosia ("ZO-sha") ends a feud between families. Professor Pimko turns the narrator into a child in *Ferdynand*, a novel in this language by the author of *Trans-Atlantyk*. Marcus Vinicius is the protagonist of a novel in this language set during the reign of Nero, titled *Quo Vadis*. For 10 points, the epic *Pan Tadeusz* ("pahn ta-DAY-oosh") is in what language, used by the authors Adam Mickiewicz ("ah-DOM meets-k'YEV-vitch"), Witold Gombrowicz ("gom-BROH-vitch"), and Henryk Sienkiewicz ("shen-k'YEV-itch")?

ANSWER: **Polish** [or **Polska**]

<European Literature>

4. Meade Lux Lewis, Albert Ammons, and Pete Johnson played a trio of these instruments on recordings like “Boogie Woogie Prayer.” For the Broadway show *Runnin’ Wild*, a player of this instrument composed the tune that would accompany the Charleston dance. The jazz standard “Misty” was composed by a player of this instrument, Errol Garner. A player of this instrument performed his composition “Ain’t Misbehavin’” in the 1943 film *Stormy Weather*. During the Harlem Renaissance, players of this instrument competed in “cutting contests.” A nearly blind player of this instrument was known for his virtuosic renditions of the songs “Tea for Two” and “Tiger Rag.” For 10 points, name the instrument played in a “stride” style?

ANSWER: **piano** [prompt on **keyboard**]

<Other Arts (Auditory)>

5. During this event, one woman opposed French John’s plan to booby-trap a house with gunpowder. A soldier paraded a leader’s hat around on a bayonet during this event, in which one man allegedly jumped in front of a cannon yelling “Are you... Goths or Vandals?” in order to save a patent office. After this event, people sought refuge in Brookeville for a day before moving to the Octagon House. Paul Jennings wrote a memoir recalling this event, which was ended by a freak tornado and occurred after a retreat in the “Bladensburg races.” During this event, Dolly Madison ordered slaves to rescue a portrait of George Washington from the White House. For 10 points, name this event during the War of 1812, which destroyed much of the US capital.

ANSWER: British **burning of Washington**, D.C. in the War of 1812 [accept **fire**, **invasion**, **destruction**, **attack**, or synonyms in place of “burning”; accept “D.C.” or “the District of Columbia” in place of “Washington”; prompt on **burning** or **looting of the White House** by asking “what city was it in?”]

<American History>

6. This country’s highest judge resigned in 2018 after wiretaps revealed that judgeships and sentence reductions were for sale in the National Council of Magistracies. Francisco Sagasti has led this country since Manuel Merino’s resignation after only six days in office in November 2020. A constitutional crisis erupted after this country’s legislature ignored its own dissolution and tried to remove Martín Vizcarra. It’s not Brazil, but in 2019, an Odebrecht bribery investigation led this country’s former president Alan García to shoot himself while police arrested him. This country’s Popular Force party was led by Keiko and Kenji, two children of former president Alberto Fujimori. For 10 points, name this country with a crisis-ridden government in Lima.

ANSWER: **Peru** [or Republic of **Peru**; or República del **Perú**]

<CE/Geo/Other/Pop Culture>

7. A poem by this author opens “The seafoam, endless, thick, so I couldn’t find / the line where the sea dashed its wave at me,” evoking the title landscapes of a native region. A poem by this author describes a “black storm wind” stopping a character’s “rose boat.” In a poem by this author, the speaker envisions a time when “you shall know our alliance was celestial / and, our great pact once broken, you had to die.” This poet’s pseudonym is partly an homage to the Occitan (“OCK-sit-in”) poet who wrote *Mirèio*. Eight poems about the death of this author’s mother open her collection *Tala*. The speaker lowers a body from a “frozen niche” into the “humble, sunny earth” to open a set of three poems that this poet addressed to her dead lover, Romelio Ureta. For 10 points, name this Chilean poet of *Sonnets of Death*.

ANSWER: Gabriela **Mistral** [or Lucila Godoy **Alcayaga**] (The first poem is “Patagonian Landscapes.”)

<World/Other Literature>

8. *Description acceptable*. In this general practice, miniature tiled buildings represent the Ten Courts, as described in a book that categorizes this practice as part of “diffused religion.” In a holiday for this general practice that was originally named for “Cold Food,” paper boats and lanterns are released on the water. This general practice involves a tablet that the *po* settles in after separating from the *hun*. Although the Jesuit policy of accommodation allowed this practice, Clement XI’s (“the eleventh’s”) bull *Ex illa die* (“ex ILL-uh DEE-ay”) condemned it in a “Rites

Controversy.” People may wear white for three years during a form of this practice, which involves sweeping graves and burning joss paper during the Qingming Festival. For 10 points, name this practice of ritual celebration of deified family members seen in the Chinese traditional religion.

ANSWER: **ancestor veneration** [or equivalents like **worship**, **honoring**, or **veneration of ancestors** or the **dead**; accept **sweeping graves** or **mourning**; accept **filial piety**; prompt on Chinese folk religion or popular religion or Chinese traditional religion or Chinese rites or rituals by asking “what specific practice?”] (The “diffused religion” quote is from C. K. Yang’s *Religion in Chinese Society*.)

<Religion>

9. This book inspired the name of Bernard Williams’s method for investigating the “basic virtues” of truth in the book *Truth and Truthfulness*. This book contrasts Stendhal’s claim that beauty is “a promise of happiness” with Schopenhauerian aesthetic contemplation, which conceals a wish to “escape from... torture.” This book turns to the etymology of words like “schlecht” and “schlicht” after rejecting theories about the “utility” of altruism proposed by “English” thinkers like Paul Rée. Foucault named his successor to the “archaeological method” after this book’s title method, which is used to trace how the “ascetic priest” cultivated *ressentiment* (“ruh-SAWN-tee-MAWN”) among his “sick sheep.” A “revolt of the slaves” relabeled nobility as evil according to, for 10 points, what Nietzsche (“NEE-chuh”) book about the origins of ethics?

ANSWER: *On the **Genealogy of Morals*** [or *On the **Genealogy of Morality: A Polemic***; or *The **Genealogy of Morals***; or *Towards the **Genealogy of Morals***; or *Zur **Genealogie der Moral: Eine Streitschrift***] (Both Williams and Foucault were inspired by Nietzsche to adopt a “genealogical method.”)

<Philosophy>

10. This compound undergoes a functional “switch” after birth that is detectable by expression levels of KCC2. This molecule increases dopaminergic firing bursts via disinhibition of interneurons in the substantia nigra and VTA. PKC phosphorylates this molecule’s pentameric A receptor, lowering the receptor’s sensitivity to this molecule. Stellate cells release this molecule to suppress parallel fiber inputs to Purkinje (“pur-KIN-jee”) cells, which also release this molecule. This molecule’s “shunt” uses a pyridoxal phosphate-dependent enzyme to synthesize it. Glycine and this molecule both have a hyperpolarizing effect, and benzodiazepines (“benzo-dye-AZ-uh-peens”) and alcohol potentiate this molecule’s effects. For 10 points, the decarboxylation of glutamate creates what major inhibitory neurotransmitter?

ANSWER: **GABA** [or **gamma-aminobutyric acid** or **gamma-aminobutyrate**]

<Biology>

11. A piece named for a location in this country begins with the descending melody “F-sharp, D, C-sharp, D, long B, long low F-sharp.” A symphony in A minor named for this country starts with a long introduction in 3/4 (“three-four”) time before the main theme is presented in 6/8 (“six-eight”) starting with two pickup eighth notes. Folk songs such as “The Dusty Miller” are used in a piece named for this country, whose “Allegro guerriero (“gair-YAIR-oh”)” finale features numerous triple and quadruple stops. That work was dedicated to Pablo de Sarasate (“sah-rah-SAH-tay”) and has a prominent harp part in addition to the violin soloist. An 1833 concert overture was inspired by a cave on an island within this country. For 10 points, name this country that titles a fantasy for violin and orchestra by Max Bruch, and that inspired Mendelssohn’s Third Symphony.

ANSWER: **Scotland** [accept **Scottish** Symphony; accept **Scottish** Fantasy; prompt on United Kingdom or UK or Great Britain]

<Classical Music>

12. *Description acceptable.* A brief achievement for this cause was the founding of the Septinsular Republic, which was eventually annexed by France. A chant calling on slaves to support this cause by “rising up with righteous fury / and coming down from your caves” got its author arrested in Vienna. Thomas Gordon of Aberdeenshire, who wrote a history of this cause, stopped supporting it after witnessing the massacre of Tripolitsa’s inhabitants. Soldiers

known as *palikari* fought for this cause, which was also supported by the Odessa-based “Society of Friends.” This cause’s goal was achieved with Edward Codrington’s decisive victory at the Battle of Navarino. For 10 points, Lord Byron and other *philhellenes* fought for what cause, which sought to liberate a Balkan country from the Ottoman Empire?

ANSWER: **Greek independence** [or equivalents such as **Greek self-governance**] (The author of *Thourios* is Rigas Feraios.)

<European History>

13. Gergely (“GAIR-gay”) et al. found that this behavior is sensitive to an agent’s hands being wrapped in a blanket, evidencing a “rational” form of this behavior. Unlike chimpanzees, human children perform this behavior faithfully, or perform a form of this behavior prefixed by “over-.” A University of Queensland study challenged Andrew Meltzoff’s conclusion that this capacity is innate, using similar observations of infants sticking out their tongues. Children primed with the idea of social exclusion perform this behavior more in order to signal affiliation. Children demonstrated both novel forms of aggression [emphasize] and engaged in this behavior after watching an adult attack a bobo doll in an Albert Bandura experiment. Skills like tool usage can be transmitted by, for 10 points, what behavior of copying another agent’s behavior?

ANSWER: **imitation** [or **mimicry**; or **copying** until read; or **imitative** learning; or word forms; prompt on **social learning**; prompt on **observational learning**; do not accept or prompt on “emulation” or word forms]

<Social Science>

14. This man is brought to the 2500s to govern Astrobe in R. A. Lafferty’s *Past Master*. While a servant, the protagonist of a novel watches this man read, and later claims that this man wears a horsehair jerkin. Peter Giles helped this man construct a Latin-like language that is used in a quatrain appended to his most famous work. This man asks “when the Devil turned ’round on you, where would you hide?” after William Roper says he would “cut down every law in England.” The Common Man introduces a play named for this man, in which Richard Rich perjures against him. This man is the enemy of Thomas Cromwell in *Wolf Hall*. This author is executed for refusing to approve Henry VIII’s divorce in Robert Bolt’s *A Man for All Seasons*. For 10 points, name this author of *Utopia*.

ANSWER: Thomas **More** [prompt on *A Man for all Seasons*]

<British Literature>

15. States of this physical quantity are analogized to states of a neuron in the energy function of a Hopfield network. Geometrical frustration among these quantities produces degenerate ground states in the Edwards–Anderson model, in which they are the degrees of freedom. In a system whose independent variables are these quantities, the transfer matrix method yields the 1-D partition function. This quantity names magnetically-disordered “glass” models in statistical physics. Each site has a value of plus-1 or minus-1 for this quantity in the Ising (“EE-zing”) model, which describes how ferromagnetism arises when dipoles produced by these quantities align. For 10 points, the unpaired electrons in a paramagnet can have “up” or “down” values of what quantum mechanical type of intrinsic angular momentum?

ANSWER: **spins** [accept **spin** glass; prompt on magnetic **moment** or **magnetization** until “magnetically-disordered” is read]

<Physics>

16. A governor of this colony held a macabre ball for local noblewomen, during which he presented coffins that purportedly held the bodies of their loved ones. A rebel leader in this colony, who was given the epithet “prophetess,” named all of her three children after the Virgin Mary. A black pig was sacrificed by Dutty Boukman during an anti-colonial ceremony held in this colony’s Bois Caïman (“bwah kah-ee-MON”). A yellow fever outbreak forced Charles Leclerc to leave this colony, after which he was replaced by the cruel Vicomte de Rochambeau. This colony’s elite, divided among the *grand blanc* and *petit blanc*, were driven out by Jean-Jacques

Dessalines (“dess-ah-LEEN”). For 10 points, what colony on Hispaniola was known as Saint-Domingue (“san duh-MANG”) before it gained independence following a slave revolution?

ANSWER: **Haiti** [or **Saint-Domingue** until read]

<World History>

17. In a draft of this story called “Beginners,” Herb goes to a library-themed restaurant chain. One character in this story says “Bzzzzz!” and jokes about putting on a beekeeping outfit. After a man in this story claims that he would like to be reincarnated as a knight, people argue over the words “vessel” and “vassal.” This story ends with the sound of hearts beating “when the room went dark.” An elderly man in a full-body cast who is upset because he can’t look at his wife, and a woman’s old boyfriend Ed, who drank rat poison then shot himself, are cited as examples of this story’s title concept. In this story, a cardiologist drinks gin with Nick, Laura, and his wife Terri. For 10 points, name this Raymond Carver short story in which Mel discusses the title emotion.

ANSWER: **“What We Talk About When We Talk About Love”**

<American Literature>

18. *Description acceptable.* A god, potentially of bees, is depicted in this namesake manner in the Mayan ruins of Tulum. A *teru teru bōzu* may be placed in this manner to [emphasize] *request* rain. After Indra refuses to allow him to ascend in his physical body, Trishanku resides between heaven and earth in this manner. Thanatos and Hypnos are symbolized by torches depicted in this manner. Unable to play a flute in this manner, Marsyas (“MAR-see-us”) loses a contest and is flayed by Apollo. Poseidon punishes Cassiopeia to sit on a throne in this manner half the time. Luck flows out if a horseshoe hangs in this manner. Considering himself unworthy of comparison to Jesus, Peter requests to be crucified in this manner. For 10 points, in popular culture, the symbol of a cross oriented in what manner is linked to Satanism?

ANSWER: upside-**down** [or **inverted**; or **downwards**; or **descending**; or **diving**; or equivalents; accept **lying on one’s back** after “Cassiopeia” is read, and prompt on descriptions of **clinging to her throne** by asking “why does she need to?”; accept a horseshoe with the **open end pointing down** after “horseshoe” is read] (The Mayan god is the Descending God or the Diving God.)

<Mythology>

19. The Russo group's improvements to this technique include 100-keV ("K-E-V") sources and functionalized graphene supports. This technique uses likelihood-based classification tools like SPHIRE and RELION ("rely-on"). In early 2020, this technique identified an upward-facing receptor binding domain in the prefusion ("pre-fusion") SARS-CoV-2 spike protein. Jacques Dubochet ("doo-bo-SHAY"), Joachim Frank, and Richard Henderson won a Nobel Prize in Chemistry for work on this technique. This technique was used in two 2020 *Nature* papers by Yip et al. and Nakane ("na-ka-neh") et al. to obtain atomic-resolution structures of apoferritin. Samples in this technique are plunged into liquid ethane after embedding in vitreous water to avoid crystallization. For 10 points, name this type of electron microscopy that finds structures of low-temperature samples.

ANSWER: **cryo-EM** [or **cryogenic electron microscopy**; or **cryo-electron microscopy**; or **electron cryo-microscopy**; prompt on partial answer; do not accept or prompt on "super-resolution microscopy"]

<Chemistry>

20. Six angels surround this figure, whose skin is covered in tendril-like patterns, in a Tilman Riemenschneider altarpiece. In a fragment by van der Weyden, this person is shown in green reading beside a jar. Due to conflation with a saint from Egypt, late medieval artists often depicted this person with wildly overgrown body hair. Lynn Picknett and Clive Prince argue that this figure, not John, leans toward Peter in Da Vinci's *Last Supper*. This person has strikingly muscular arms in a sculpture described by Vasari as "wasted away by fasting." This person holds a skull on her lap and contemplates a candle in a Georges de La Tour painting. Donatello created a deeply emaciated wooden version of this "penitent" woman. For 10 points, name this woman, a supposed sinner and companion of Jesus.

ANSWER: Mary **Magdalene** [or **Mary** of **Magdala**; accept *The Magdalen Reading* or *The Penitent Magdalene*; prompt on **Mary**; do not accept or prompt on "the Virgin Mary" or "Madonna"]

<Painting/Sculpture>

Bonuses

1. This woman titles a play in which she is represented by a folded gown at the front of the stage, which is set after an incident from a novel in which her attendants push another woman's carriage aside at a festival. For 10 points each:

[10h] Name this woman who is possessed by her rival's spirit in the aftermath of that incident, shortly before dying in childbirth.

ANSWER: Lady **Aoi** [or **Aoi no Ue**]

[10e] Lady Aoi is the first wife of the title prince in this Heian ("HAY-on")-era novel by Lady Murasaki Shikibu.

ANSWER: *The **Tale of Genji*** [or **Genji monogatari**]

[10m] In the standard translation, the last chapter of *The Tale of Genji* is titled for a "Bridge of Dreams" with this attribute. Ihara Saikaku inaugurated a genre of Japanese fiction named for a "world" with this attribute.

ANSWER: **floating** [accept "**floating** world" or **ukiyo-zōshi**]

<World/Other Literature>

2. A seven-foot-tall canine skeleton found in Suffolk has been linked to this creature, which may have inspired *The Hound of the Baskervilles*. For 10 points each:

[10h] Name this one-eyed black dog of East Anglia. Abraham Fleming claimed that this hellhound burst into churches during a 1577 storm, killing several people and leaving scorch marks on the doors.

ANSWER: Black **Shuck** [accept Old **Shuck** or **Old Shock**; prompt on **Barghest**]

[10e] A protective dog specter named with this adjective is said to haunt churches. Death itself is often portrayed as a "Reaper" of this sort.

ANSWER: **grim** [accept church **grim** or kirk **grim** or The **Grim** or the **Grim** Reaper]

[10m] In Cornish black dog stories, the Devil carries off a sinful priest whose dogs give chase and join this event. Jacob Grimm identified another English phantom, Herne ("hurn"), as a leader of this ghostly procession in the sky.

ANSWER: the **Wild Hunt** [accept **Wilde Jagd**; prompt on **Hunt**; prompt on **Dando's dogs** or the **Devil's Dandy Dogs** by asking "what event were they a part of?"]

<Mythology>

3. These phenomena often arise from renormalization schemes that control the infinite degrees of freedom in quantum theories. For 10 points each:

[10h] Give this term for situations in which a symmetry of a classical system is broken by that system's quantized version. One of these phenomena that breaks a chiral ("KYE-rull") symmetry is named for Adler, Bell, and Jackiw ("JACK-eev").

ANSWER: **anomaly** [or **anomalies**; accept axial **anomaly** or chiral **anomaly** or Adler–Bell–Jackiw **anomaly**]

[10m] The Adler–Bell–Jackiw anomaly breaks the conservation of this quantum number that is equal to the number of quarks minus the number of antiquarks, all divided by three. It is zero for mesons.

ANSWER: **baryon** number [prompt on **B**]

[10e] Baryon number violation is only indirectly addressed in this theory of the elementary particles that govern the electromagnetic, weak, and strong interactions. The Higgs boson was the last particle in this theory to be discovered.

ANSWER: **Standard Model**

<Physics>

4. This book discusses the counter-culture created by a group of "lads" to analyze the process of "self-damnation" that leads to the social reproduction of their working class status. For 10 points each:

[10h] Name this ethnography by Paul Willis about the "Hammertown Boys." This book explains how those boys paradoxically find empowerment in their "acceptance of subordinate roles in western capitalism."

ANSWER: **Learning to Labour** [or **Learning to Labour: How Working Class Kids Get Working Class Jobs**]

[10e] Willis's study was conducted at a secondary school in this country. Friedrich Engels wrote a monograph on "The Condition of the Working Class" in this country.

ANSWER: **England** [or Great **Britain**; or the **United Kingdom**; or the **UK**; accept *The Condition of the Working Class in England*]

[10m] Willis's work draws on *Pedagogy of the Oppressed*, which posits that its title aim must undo this process. Frantz Fanon ("fah-NAWN") discussed how colonial violence seeks to perform this process of objectifying its subjects.

ANSWER: **dehumanization** [or word forms like **dehumanizing**; or **deshumanización**; or **desumanização**; or **déshumanisation**]

<Social Science>

5. In a story named for this animal, Cathy's grandmother says "Your mama and I are not related" after "smilin' man" calls her "aunty," and a man smashes the camera of two white filmmakers who record his grandchildren. For 10 points each:

[10e] Name this animal that follows "Blues Ain't No" in the title of that story. Tom Robinson is unjustly convicted of rape in a Harper Lee novel named for this animal.

ANSWER: **mockingbird** [or **mockin bird**; accept "Blues Ain't No **Mockin Bird**" or *To Kill a Mockingbird*; prompt on bird]

[10h] This author of "Blues Ain't No Mockin Bird" and *Gorilla, My Love* wrote about Squeaky, who wins a race and decides to teach her disabled older brother, in her story "Raymond's Run."

ANSWER: Toni Cade **Bambara**

[10m] In a Bambara story named for this type of event, Miss Moore shows Sylvia an expensive toy boat at FAO Schwarz. This is the last word in the title of a play in which Boy Willie and Berniece exorcise Sutter's ghost from an instrument.

ANSWER: **lesson** [accept "The **Lesson**" or *The Piano Lesson*]

<American Literature>

6. In the title of an "Idyll for Large Orchestra" by Anton Webern, which is the only tonal work by him to be commonly performed, this natural phenomenon follows the German word "Im." For 10 points each:

[10h] Name this natural phenomenon occurring at a namesake time of year. Arnold Schoenberg's *Gurre-Lieder* ("GURR-uh-LEE-der") ends with a "Wild Hunt" of this natural phenomenon.

ANSWER: **summer wind** [or **Sommerwind**; accept *Im Sommerwind*; prompt on wind or summer]

[10m] The "melodrama" of "The Wild Hunt of the Summer Wind" was Schoenberg's first use of this vocal technique, which combines singing and speaking.

ANSWER: **sprechstimme** ("SPREK-shtim-muh") [or **sprechgesang**; prompt on speech-song]

[10e] Schoenberg, Webern, and this other composer formed the Second Viennese School. This composer wrote the opera *Wozzeck* ("VOT-seck") and a violin concerto dedicated "to the memory of an angel."

ANSWER: Alban **Berg** ("ALL-bahn BAIRG")

<Classical Music>

7. In Operation Viersen, this unit tricked the Germans into moving most of their forces away from actual troops by creating fake camps and playing the recorded sounds of bridge-building. For 10 points each:

[10h] Name this American deception unit in World War II composed mostly of artists. This unit created "atmosphere" by going to bars dressed as members of other units and imitating other radio operators' Morse code styles.

ANSWER: **Ghost Army** [or **23rd** Headquarters Special Troops]

[10e] The Ghost Army famously made use of inflatable examples of these treaded vehicles, which include the American M4 Shermans.

ANSWER: **tanks**

[10m] The Sherman tank was first used in this battle described by Churchill as “the end of the beginning.” Tanks were disguised as trucks in this battle’s Operation Bertram, inspiring the creation of the Ghost Army.

ANSWER: Second Battle of **El Alamein**

<American History>

8. This technique is used to measure coupling between molecular vibrations, as well as the evolution of transient molecular structures. For 10 points each:

[10h] Name this specific type of infrared spectroscopy that applies two pump pulses and one probe pulse on femtosecond time scales, obtaining data that is plotted on a frequency correlation spectrum.

ANSWER: **two-dimensional** infrared spectroscopy [or **2D** IR spectroscopy; accept **two-dimensional** Fourier transform infrared spectroscopy or **2D** FTIR; prompt on **Fourier** transform infrared spectroscopy]

[10e] 2D IR spectroscopy is used to study the formation of coordination complexes, in which these species bond to a metal ion. Common examples of them include the ammonia molecule and the cyanide ion.

ANSWER: **ligands** (“LIG-unds”)

[10m] IR stretches of pi-acceptor ligands like carbonyl (“car-bo-NEEL”) molecules are affected by this process, in which d-electrons from the metal ion are donated to an empty antibonding orbital of the ligand.

ANSWER: pi **backbonding** [or pi **backdonation**]

<Chemistry>

9. Gotthold Ephraim Lessing used this sculpture to examine when the visual arts are constrained by aspiration for beauty in the essay “On the Limits of Painting and Poetry.” For 10 points each:

[10h] Name this sculpture that was restored with an outstretched right arm, which was later proven inaccurate by the bent Pollack Arm.

ANSWER: **Laocoön** (“lay-AH-koh-on”) *and His Sons* [or the **Laocoön Group**]

[10m] In *Modern Painters*, this critic derided pursuit of beauty before truth and found *Laocoön* “ill-chosen, meanly conceived, and unnaturally treated.” This author of *The Stones of Venice* liked Turner and the Pre-Raphaelites.

ANSWER: John **Ruskin** (The “profane” art resulting from pursuit of beauty before truth is discussed in Part IV of *Modern Painters* and *Laocoön* in Part III.)

[10e] Ruskin unfavorably compared *Laocoön* to this artist’s Brazen Serpent for the Sistine Chapel. This man sculpted a surprisingly youthful Mary in his *Pietà*.

ANSWER: **Michelangelo** [or **Michelangelo** di Lodovico Buonarroti Simoni]

<Painting/Sculpture>

10. S. Rajaratnam and Toh Chin Chye's ("toh chin chai's") opposition to policies favoring *bumiputera* ("boo-mee-POO-tra") led them to co-found this party. For 10 points each:

[10h] Name this party that had a tenuous relationship with the UMNO in the period from 1963 to 1965. In 1963, this party conducted Operation Coldstore to jail their political opponents.

ANSWER: **People's Action Party** [or **PAP**]

[10m] Malaysia's policy of promoting *bumiputera* was extremely similar to this leader's promotion of the *pribumi*. This leader's "New Order" government targeted Chinese immigrants in his country.

ANSWER: **Suharto**

[10e] In the 1960s, this country also refused to be in a federation with Malaysia, likely because it did not want to lose rights to vast petroleum reserves. Bandar Seri Begawan is the capital of this sultanate of Borneo.

ANSWER: **Brunei** [or Nation of **Brunei**, the Abode of Peace]

<World History>

11. The stage directions for this play frequently call for its title character to "brood" and to assume a "listening posture." For 10 points each:

[10m] Name this one-act, one-man play in which the title character often repeats the word "spool." In an odd sequence at the beginning of this play, the title character thoughtfully peels and eats a banana.

ANSWER: ***Krapp's Last Tape***

[10h] This author sat in an electric wheelchair during his acclaimed performance in Samuel Beckett's *Krapp's Last Tape*, two years before his death. This author lambasted the Iraq War in his Nobel lecture *Art, Truth and Politics*.

ANSWER: Harold **Pinter**

[10e] Beckett's *Waiting for Godot* is often cited as an influence on this Pinter play in which the hitmen Ben and Gus engage in small talk and send food through the title device while awaiting their next assignment.

ANSWER: *The **Dumb Waiter***

<British Literature>

12. This problem is often solved by simplifying its expressions into conjunctive normal form. For 10 points each:

[10m] Name this problem of assigning truth values to variables in a statement so that the statement evaluates to true. This problem was the first problem proven to be NP-complete.

ANSWER: Boolean **satisfiability** problem [or propositional **satisfiability** problem; or **SAT** or **B-SAT**; accept more specific versions like 3-**SAT** or k-**SAT**]

[10e] In conjunctive normal form, clauses are connected by this logical operation. This is the final gate in a product-of-sums expression, and it only evaluates to true if both inputs are true.

ANSWER: **AND** [or **AND** gate; prompt on logical **conjunction**]

[10h] In addition to converting Boolean algebra expressions to conjunctive normal form, this technique can be used to simplify them. It involves ordering Gray code cells onto a 2D grid and finding minterms as large blocks.

ANSWER: **Karnaugh map** [or **Karnaugh-Veitch map** or **KV-map** or **K-map**]

<Other Science (Computer Science)>

13. This artist sketched a horned man with eyestalks wrapping around his face against a backdrop of chains while still at Polaris High School. For 10 points each:

[10h] Name this artist of that portfolio, which appeared on a 2019 *Antiques Roadshow* episode. This artist tore down wood-gridded domes inspired by Tatooine, meant for the homeless, after failing to obtain a proper building permit.

ANSWER: Kanye **West** [or **Kanye** Omari West; prompt on **Ye** or **Yeezy** or **Yeezus**]

[10e] Kanye collaborated with Takashi Murakami for the cover art of *Kids See Ghosts*, in which wispy white figures hover at the center of a landscape inspired by this Japanese artist of *The Great Wave off Kanagawa*.

ANSWER: Katsushika **Hokusai**

[10m] One version of this Kanye album's cover features a ballerina in a black tutu holding a wine glass, while an uncensored version depicts Kanye straddled by an armless winged female nude, referred to as a phoenix.

ANSWER: **My Beautiful Dark Twisted Fantasy**

<CE/Geo/Other/Pop Culture>

14. This law was repealed after the women of Rome blockaded the Forum and took their demands to the magistrates. For 10 points each:

[10h] Name this sumptuary law, enacted during the Second Punic War soon after the defeat at Cannae, that limited the ability of women to possess gold, wear ostentatious clothes, or ride in carriages in the city.

ANSWER: Lex **Oppia** [accept **Oppian** Law]

[10m] As consul, this ultra-conservative Roman politician delivered a speech opposing the repeal of the Lex Oppia. This man, who opposed Scipio Africanus's adoption of Greek customs, wrote *De Agricultura* and *Origines*.

ANSWER: Marcus Porcius **Cato the Elder** [prompt on Marcus Porcius **Cato**; accept **Cato Maior** or **Cato the Wise** or **Cato the Censor** or **Cato the Ancient**; do not accept or prompt on "Cato the Younger" or "Cato Minor"]

[10e] Specifically, under the Lex Oppia, women were probably forbidden from wearing clothes of this noble color. The Phoenicians exported a dye of this color that they manufactured from the secretion of *murex* sea snails.

ANSWER: **purple** [or **violet**]

<Other History>

15. A handbook on education dedicated to Margaret of Burgundy is titled for the "Treasure" of this place. For 10 points each:

[10h] Name this allegorical place, erected upon the Field of Letters. While reading Maltheolus's *Lamentations*, the author is interrupted by a vision in which the virtues Reason, Rectitude, and Justice assist in constructing this place.

ANSWER: the **City of Ladies** [or *The Book of the City of Ladies*; or *Le Livre de la Cité des Dames*]

[10e] Christine de Pizan wrote *The Book of the City of Ladies* amid a debate over the misogyny of the *Roman de la Rose*, which epitomizes courtly love, a medieval conception of love based on this knightly code.

ANSWER: **chivalry** [or the **chivalric** code]

[10m] Courtly love is central to Marie de France's works in this medieval genre of rhymed stories, popularized in part by Breton minstrels. The "last minstrel" sings a work in this genre about a border feud in a Walter Scott poem.

ANSWER: Breton **lay** [or **lais**; accept *The Lay of the Last Minstrel*]

<European Literature>

16. A belief system in this country has a calendar that begins on April 15, 1912, and whose name translates as "self-reliance." For 10 points each:

[10e] Name this country home to the national ideology *Juche* ("joo-CHEH"), where its rulers are posthumously awarded the title "Eternal Leader."

ANSWER: **North Korea** [or **DPRK**; or **DPR Korea**; or **Democratic People's Republic of Korea**; or **Choson Minjujuui Inmin Konghwaguk**; prompt on **Korea**; prompt on **Choson**; do not accept or prompt on "Republic of Korea" or "ROK"]

[10h] Although most North Koreans are atheist, this religion has grown in popularity due to its "Party of the Young Friends of the Heavenly Way." This Korean religion combines Shamanism, Taoism, Buddhism, and Confucianism.

ANSWER: **Chondoism** [or **Cheondoism**; or **Cheondogyoism**; or **Ch'ondogyoism**; accept "the Heavenly Way" until read]

[10m] This televangelist notably preached at Kim Il Sung University in 1992. Harry Truman ignored this creator of many revivals known as "crusades" after this man urged him to oppose North Korean communism.

ANSWER: Billy **Graham** [or William Franklin **Graham** Jr.]

<Religion>

17. A frantic and blurry sequence in a film by this director depicts a woman running through a crowded marketplace to escape Indian and Pakistani drug smugglers. For 10 points each:

[10m] Name this director whose film *Chungking Express* depicts two different police officers dealing with recent breakups. In another of his films, two characters in adjacent apartments bond when their spouses have an affair.

ANSWER: **Wong Kar-Wai** (The second film is *In the Mood for Love*.)

[10e] *Chungking Express* and *In the Mood for Love* are both set in this city. John Woo, another director from this city, based his movie *The Killer* on this city's infamous Triads.

ANSWER: **Hong Kong** [or **Hsiang Kang**; or **Xiang Gang**]

[10h] Both "Dreams" and this other song recur throughout the second half of *Chungking Express*. In the film, a diner worker played by Faye Wong blasts this song while serving food, reflecting her desire to go to America.

ANSWER: "**California Dreamin'**"

<Other Arts (Visual)>

18. This king persuaded Sultan Ahmad III to give him refuge in the Ottoman Empire after his failure in a campaign. For 10 points each:

[10m] Name this king whose decisive loss at the Battle of Poltava likely occurred due to his troops starving during Europe's extremely cold winter of 1709.

ANSWER: **Charles XII** [or **Karl XII**; or **Carolus Rex**; prompt on **Charles** or **Karl**]

[10e] Sweden was a lot less lucky in cold weather in 1719, when Carl Gustaf Armfeldt killed over 3,000 of his troops while invading this country. Along with Denmark and Sweden, this country formed the Kalmar Union.

ANSWER: Kingdom of **Norway**

[10h] *Description acceptable*. With the help of engineer Erik Dahlberg, Charles X Gustaf successfully island-hopped across the frozen Baltic Sea during this campaign against Denmark. It resulted in the Treaty of Roskilde ("ROSS-keel-ih").

ANSWER: **March Across the Belts** [or descriptions like Charles X Gustaf travelling across the Great and Little **Belts**]

<European History>

19. The CyberKnife is one of these devices mounted on a robot arm. For 10 points each:

[10h] Name these devices used in an "intensity-modulated" therapy, as well as a type of treatment often contrasted with brachytherapy. James Slater helped create one of these devices at Loma Linda.

ANSWER: particle **accelerators** [or **cyclotron**; or **synchrotron**; or linear **accelerator**; or **linac**; prompt on **radiotherapy** devices or **radiation** therapy devices or **radiosurgery** devices or proton **beams**]

[10e] Medical particle accelerators are often used to treat this general disease with proton therapy or intensity-modulated radiation therapy, as an alternative to chemotherapy.

ANSWER: **cancer** [accept specific forms of cancer]

[10m] In proton therapy, an energy plot has a peak of this name where maximum energy is delivered to the tumor. An equation of this name, which is a subset of the Laue ("LAO-uh") conditions, describes X-rays' interaction with matter.

ANSWER: **Bragg** [accept **Bragg** peak or **Bragg's** law or Wulff-**Bragg's** condition; accept Lawrence **Bragg** or William Henry **Bragg**]

<Biology>

20. Sally Haslanger's argument that this concept only exists in a hierarchy is opposed by both Chike Jeffers's cultural constructionism and Quayshawn Spencer's biological realism. For 10 points each:

[10e] Name this general category. In a paper on "gender and" this concept, Haslanger defines it as the "observed or imagined bodily features presumed to be evidence of ancestral links to a certain geographical region."

ANSWER: **race** [accept “Gender and **Race**: (What) Are They? (What) Do We Want Them To Be?”]
[10m] Haslanger’s definitions of gender and race refer to the “dominant” form of this concept, which she has defined as “cultural technē (“TEK-nee”) gone wrong.” Karl Marx titled a book for the “German” form of this concept.

ANSWER: **ideology** [accept *The German **Ideology*** or *Die deutsche **Ideologie***]

[10h] That Haslanger paper cites Marilyn Frye’s essay titled for this phenomenon, which Frye analogized to the wires of a birdcage. Haslanger also cites Iris Marion Young’s theory of the “five faces” of this phenomenon.

ANSWER: **oppression** [accept sexist or racist **oppression**; prompt on sexism or racism]

<Philosophy>