

2023 ACF Regionals

Packet J by Berkeley B, Bristol A, Columbia B, Florida B, Imperial A, Mississippi State, Northwestern, Texas A&M A

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Tossups

1. This person compared himself to Pyrrhus’s diplomat Cineas in a speech given to a “glorious hall... purified by the air of liberty.” A variety of cream-filled sponge cake was created to honor this person’s visit to Baltimore, part of a tour that popularized white silk cravats (“cruh-VATS”) and caused a bout of his namesake “fever.” This man edited the *Parliamentary Messenger* to work around a ban on publishing proceedings in the House of Magnates. The rocky relationship between this man and his general Artúr Görgei allowed Josip Jelačić (“YO-seep YAY-lah-cheech”) to wage a successful counter-revolutionary campaign that preserved Croatian autonomy. This man was ideologically opposed by Count Széchenyi (“SAY-chain-yee”), although both detested Austrian hegemony in the Dual Monarchy. For 10 points, name this Hungarian revolutionary who was active in 1848.

ANSWER: Lajos **Kossuth** (“LYE-ohsh KOH-shoot”) [or **Kossuth** Lajos; or Louis **Kossuth**; or Lajos **Kossuth** de Udvard et Kossuthfalva; accept **Kossuth** mania; accept **Kossuth** cake or **Kossuth** kifli] (Kossuth compared himself to Cineas in an 1852 speech during a dinner sponsored by the US Congress.)

<European History>

2. *Note to moderator: Read the answerline carefully.*

Seeing this substance inspires Hiranyagarbha to become a renunciant. In a common piece of iconography, this substance represents the five peaks of Mount Wūtái (“oo-tai”) or the five-syllable mantra of Mañjushrī. This substance is donated to Tirupati’s Balaji Temple because Neela Devī legendarily used it to heal Venkateswara’s wound. A white kind of this substance forms the ūrṇā, one of 32 distinguishing marks. Sculptures from Gandhāra often depicted this substance as a knot. A shikha of this substance remains during the Upanāyana (“oo-puh-NAY-uh-nuh”), or sacred thread ceremony. Altering this substance is one of the “four transgressions.” This substance is cleaned with a kangha by members of the Khalsa, who keep it intact as kesh. For 10 points, the “Five Ks” of Sikhism include what natural substance, often kept unshorn under a turban?

ANSWER: **hair** [accept types of hair like **beards**, facial **hair**, **tresses**, **curls**, **locks**, or **braids**; accept the Buddha’s **hair**; accept hair **follicles**; accept **kesh** as until “kesh” is read; accept **jaṭās**, **uṣṇīṣa**, pañca**śikhin**, or Panchachira; prompt on **moles**, **dots**, **crowns**, **crests**, or **protuberances** by asking “typically said to be made of what substance?”; prompt on third **eye** by asking “what substance is it typically said to manifest as on the Buddha?”; prompt on **keratin**] (A kangha is a comb.)

<Religion>

3. A piece by this composer that is set in the fictional nation of Talgalla includes the sections “Cultural Exchange” and “They Say I Look Like God.” This composer may have used a twelve-tone row to introduce each disciple in his cantata *The Gates of Justice*. This student of Darius Milhaud (“dar-YOOS mee-YO”) collaborated with his wife Iola and Louis Armstrong on *The Real Ambassadors*, which was inspired by his government-sponsored world tour. This musician’s ensemble got its start at the Black Hawk nightclub in San Francisco and pioneered cool jazz with live albums such as *Jazz at Oberlin*. This composer imitated street musicians in a jazz standard in 9/8 time that uses a 2+2+2+3 rhythm. For 10 points, name this jazz pianist whose namesake quartet produced the standards “Blue Rondo à la Turk” and “Take Five.”

ANSWER: Dave **Brubeck** [or David Warren **Brubeck**; accept Dave **Brubeck** Quartet; prompt on Iola Brubeck until read by asking “who was the other main collaborator?”]

<Other Fine Arts>

4. A character in this play wins an arm-wrestle before promising to put a woman’s face on an official postage stamp. That 62-year-old character in this play pretends to be impotent before organizing a feast in honor of another character, who has appeared in a magazine. Four girls in this play call a motorbike “the devil’s own horse” and a camera “the one-eyed box” before pretending to be the motorbike’s wheels. In this play, the inhabitants of a village greet a photographer by performing “The Dance of the Lost Traveller.” In this play, a schoolteacher plans to modernize Ilujinle (“ee-loo-jin-lay”), but refuses to pay the bride-price for a woman who eventually marries the local chief. For 10 points, Baroka and Lakunle compete to marry Sidi in what play by Wole Soyinka?

ANSWER: *The **Lion and the Jewel***

<World Literature>

5. A philosopher from this modern-day country wrote of a pagan who is taught about the Abrahamic religions in a work of apologetics titled *The Book of the Gentile and the Three Wise Men*. That philosopher from this country theorized sixteen “Dignities” that correspond to divine properties in his system of universal logic. A philosopher from this country studied non-existent “beings of reason” in his *Metaphysical Disputations*. A philosopher born in this modern-day country promoted an apophatic theology in which God can only be described via negation and was nicknamed “Rambam” (“rahm-bahm”). This modern-day European country was the birthplace of Averroes and Maimonides. For 10 points, name this home country of the School of Salamanca, where Jewish and Islamic thought thrived in Córdoba.

ANSWER: **Spain** [or Kingdom of **Spain**; or Reino de **España**] (The first two sentences refer to Ramon Llull, and the third refers to Francisco Suárez.)

<Philosophy>

6. Nico Declercq found that an outdoor structure on this peninsula created a low-frequency acoustic filter. In 2019, the oldest known human fossil outside Africa was dated from this peninsula’s Apidima Cave. Mesolithic seafaring is evidenced in the Franchthi (“frahnk-thee”) Cave on this peninsula, where a marshy area contains the House of the Tiles built by the Korakou (“koh-RAH-koo”) culture. On this peninsula, a sealstone “combat agate (“AG-ut”)” was left in a possible “Griffin Warrior Tomb” at a “sandy” site where syllabic “oxen tablets” record the palace economy of a wanax. It’s not Anatolia, but a type site on this peninsula contains a Lion Gate built with cyclopean masonry near beehive-shaped tholos tombs. The Morea expedition surveyed this peninsula’s Bronze Age sites of Tiryns and Pylos. For 10 points, what peninsula contains Lerna and Mycenae (“my-SEE-nee”)?

ANSWER: **Peloponnese** [or **Peloponnesus**; accept **Morea** until read; accept **Argolid** Peninsula or **Argolis**; accept **Mani** Peninsula; prompt on **Balkan** peninsula; prompt on **Greek** peninsula, **Greece**, **Hellas**, **Hellenic** Republic, or **Ellinikí** Dimokratía] (The first line refers to the theatre of Epidaurus.)

<Other History>

7. In 1949, this company appeared to sponsor an anti-French Throne Day protest by Moroccan nationalists. This company's Eswatini ("ess-wah-TEE-nee")-based "Africa Foundation" gave antiretrovirals to Namibian workers. This company led "Golden Triangle" partnerships like EKOCENTER kiosks in Uganda and Rwanda and caused a 1985 downturn in Madagascar. This company, which sells Bibo and Sparletta, had K'naan ("KAY-nawn") record a "celebration mix" of "Wavin' Flag" for the 2010 World Cup. An airplane drops an item from this company among the San of the Kalahari in *The Gods Must Be Crazy*. This company's plants in all 54 African countries are critiqued by a pun on its "colonization." This company's secret formula no longer contains the West African nut used in John Pemberton's recipe. For 10 points, what Atlanta-based multinational bottles a ubiquitous soft drink?

ANSWER: **Coca-Cola** [or **Coke**; or The **Coca-Cola** Company; accept **Coca-Colonization**; accept "Wavin' Flag (**Coca-Cola** Celebration Mix)"; accept **Coca-Cola** Beverages Africa; accept **Coca-Cola** Africa Foundation] (The downturn was caused by New Coke reducing demand for vanilla beans.)

<Other Academic>

8. *Note to moderator: Read the answerline carefully.*

Description acceptable. Herman Pontzer found this process to be "constrained" from age 20 to 60 using doubly labeled water, which Kevin Hall used to quantify its "adaptive" type in NIH "wards." EPOC ("EE-pock") is a proxy for this process, whose main component is estimated with the Katch–McArdle, Mifflin–St. Jeor, and Harris–Benedict equations. Promoting this process is the main goal of off-label use of the bronchodilator clenbuterol, the deadly protonophore 2,4-dinitrophenol, and ECA stacks with ephedrine. A dietary "effect" that is highest for protein augments this process, which is driven by uncoupling protein 1 in brown fat. Accelerometers measure fidgeting as a form of NEAT ("neat"), the "non-exercise activity" type of this process, which apocryphally outstrips intake from celery. For 10 points, identify this thermodynamic goal of physical activity.

ANSWER: energy **expenditure** [or **TDEE** or **24EE**; accept **burning** calories, **burning** fat, **expending** calories, **calories out**, or caloric **deficit**; accept generating **heat** or **warmth**, adaptive **thermogenesis**, **thermogenin**, basal **metabolic rate**, **BMR**, or **RMR**; accept **weight loss** or **cutting** weight or equivalents; accept **NEAT** until read; accept **thermic** effect of food or **TEF** or **DIT**; prompt on **metabolism**, **catabolism**, **energy** balance, **work**, **bioenergetics**, **using ATP**, **uncoupling** agents, or equivalents] (EPOC is excess post-exercise oxygen consumption.)

<Biology>

9. A character in this book owns a silver skeleton with moveable joints, reflecting his preoccupation with death. An anecdote in this book describes a man turning his clothes into stone by urinating on them before he turns into a werewolf. A mock funeral in this book causes several firefighters to break in during a dinner. The epigraph of T. S. Eliot's *The Waste Land* is taken from a character in this book who describes a Cumaean Sibyl who "wants to die." An ostentatious freedman in this book serves a selection of 12 foods that represent different zodiac signs. In this book, a boy named Giton ("GIT-own") sparks a romantic rivalry between Eumolpus and the protagonist, Encolpius. For 10 points, the lavish "Dinner of Trimalchio" is an episode from what Latin book attributed to Petronius?

ANSWER: **Satyricon** [or **Satyrice** or **Satyricon liber**]

<European Literature>

10. The strong form of a property of this technique can be proven using Farkas's ("FAR-kosh's") lemma. The integrality gap quantifies the reduction in quality when relaxing this technique, which is done for solutions to the minimum-weight vertex cover problem that are then rounded up. For certain solutions, two applications of this technique are related by the property of complementary slackness. Karmarkar's algorithm belongs to a class of interior-point methods for this technique that improved on the ellipsoid method of Leonid Khachiyan. The edges of a polytope are traversed in this technique's simplex algorithm. For 10 points, name this optimization technique in which the feasible region and objective function are defined using first-order constraints on a single variable.

ANSWER: **linear programming** [or **LP**; accept **linear optimization**; prompt on convex **optimization**]

<Other Science>

11. A man in this play is accused of "passing the buck" due to a "disgust with [himself]." The opening stage directions of this play describe the "comforts and illusions" offered by a radio and TV console and note the "tenderness" of the setting's previous owners, Jack Straw and Peter Ochello. This play premiered on Broadway with a revised third act, in which a father returns after cursing "lying dying liars." A character in this play who hurts himself while jumping hurdles describes a "five-dollar [word] that cheap politicians throw back and forth" upon being asked about "mendacity." In this play, a father learns of his cancer from his alcoholic son, who is a crutch-wearing ex-football star. For 10 points, Maggie and Brick attend Big Daddy Pollitt's birthday party in what play by Tennessee Williams?

ANSWER: ***Cat on a Hot Tin Roof***

<American Literature>

12. In 2006, Anna Wierzbicka ("v'yezh-BEETS-ka") argued that a question about this concept cannot be asked in many languages. Most Yoruba terms for this concept use the noun *àwò*. Examples of this concept are categorized by the Munsell system. Because two words for this concept are distinguished in English, but colexified in many other languages, linguists often use two terms from the book *Fact, Fiction, and Forecast*. A 1969 book by Brent Berlin and Paul Kay posits a seven-stage model for languages' approach to this concept, which they called this concept's "basic terms." Two time-dependent examples of this concept are denoted by portmanteau terms in Nelson Goodman's new riddle of induction. For 10 points, Ishihara circles can test individuals' perception of what concept that is described using the French word *jaune* ("zhone") and the Spanish *azul*?

ANSWER: **colors** [or **shades** or **hues**; accept **color** vocabulary or **color** terms; accept **chroma** or **color** intensity; accept **grue** or **bleen**; accept specific colors, such as **blue** or **yellow**]

<Social Science>

13. The ruling in this case was upheld in the *Lum v. Rice* decision, as chronicled in the book *Water Tossing Boulders*. The leading lawyer in this case published columns in the *Inter Ocean* titled "A Bystander's Notes." A justice reversed his opinion on this case when he wrote the unanimous decision against J. W. Cumming. This case was preceded by the test trial of Daniel Desdunes ("deh-DOON"), which was organized by Louis Martinet's Comité des Citoyens ("see-twah-YAHN"). A justice noted the hypocrisy of this case's decision by alluding to the Chinese Exclusion Act in its only dissent. Albion Tourgée ("toor-ZHAY") introduced the term "color blindness" in his brief for this case, whose defendant was arrested while boarding a "Whites Only" railcar. For 10 points, name this 1896 Supreme Court case that affirmed the doctrine of "separate but equal."

ANSWER: ***Plessy v. Ferguson*** [or ***Plessy v. Ferguson***; or ***Homer A. Plessy v. John H. Ferguson***; or ***Homer A. Plessy v. John H. Ferguson***; accept names in either order] (The Lum family were Chinese-Americans from the Mississippi Delta. The third line refers to *Cumming v. Richmond County Board of Education*.)

<American History>

14. The entropy described by this term takes a negative value in ligand substitution reactions. The volume described by this term can be calculated from the pressure dependence of the rate constant using transition state theory. The Gibbs function described by this term is used to express the rate constant in the Eyring (“EYE-ring”) equation. For a single rate-limited thermally driven process, a quantity described by this term can be determined from the slope of an Arrhenius plot, and the exponential in the Arrhenius equation includes that quantity described by this term divided by kT . This term describes the height of a hill on a graph of potential energy versus reaction coordinate. For 10 points, give this term that describes the energy barrier that must be overcome for a reaction to progress.

ANSWER: **activation** [accept **activation** energy, **activation** enthalpy, Gibbs free energy of **activation**, **activation** volume, or **activation** entropy; prompt on E sub a by asking “what does that stand for?”]

<Chemistry>

15. This person leads the bridle of a saint’s horse in a fresco in Santi Quattro Coronati. Bernard Berenson denigrated a monument to this person as typifying the “decline of form” due to its use of 2nd-century *spolia*. This person’s pointing finger and 8½-foot-tall head remain from an acrolithic “colossus” at the Basilica Nova’s ruins. Gianfrancesco Penni and Giulio Romano painted this person’s baptism and vision in the Vatican’s first Raphael Room. Reliefs of Hadrian’s lion hunt decorate this ruler’s namesake triumphal arch near the Colosseum. This ruler’s “dream” appears in a fresco cycle in Arezzo by Piero della Francesca, called *The History of the True Cross*. This ruler’s standard, the labarum, popularized the Chi-Rho monogram. For 10 points, what emperor was painted winning the Battle of the Milvian Bridge?

ANSWER: **Constantine** the Great [or **Constantine** I, **Konstantinos** I, Flavius Valerius **Constantinus**, or Saint **Constantine**; accept **Constantine’s Dream**, Arch of **Constantine**, Sala di **Costantino**, Hall of **Constantine**, Room of **Constantine**, *The Baptism of Constantine*, or *Colossus of Constantine*]

<Painting/Sculpture>

16. The narrator of this novel urges the reader to put it down and “read! read! read!” if an allusion to Tickletoby’s mare from Rabelais is not understood, so that they might better “penetrate” the ensuing “marbled page.” In a story from this novel, a religious controversy arises when a stranger visits Strasburg and the townspeople long to touch his face. An Erasmus-obsessed father in this novel writes an encyclopedia laying out his son’s education. In this novel, the protagonist’s uncle pores over military fortifications, one of many personal passions that the protagonist calls a “hobby-horse.” The title character’s birth, which takes up this novel’s first three volumes, is botched by Dr. Slop, causing him to develop a flat nose. For 10 points, name this digressive novel by Laurence Sterne.

ANSWER: **Tristram Shandy** [or *The Life and Opinions of Tristram Shandy, Gentleman*]

<British Literature>

17. This good was distributed in harim (“huh-REEM”) zones according to the Kitābi Qanī laws. Fatimid Cairo stored this good in marble *kilgas*. The Ajuuran Sultanate’s monopolization of this good made it a “despotic empire” according to Karl August Wittfogel’s controversial book *Oriental Despotism*. In order to distribute this good, the Marinid ruler Abū Ya‘qūb Yūsuf built a grand noria. During the Jebel Akhdar War, the British targeted the aflaj system for procuring this good, whose Persian blueprints were known as qanats (“kuh-NOTS”). Prior to the Sayl al-‘Arim cataclysm, the ancient Sabaeans obtained this good at Ma’rib. Caravanserais (“caravan-suh-ryes”) provided this good to travelers for performing wuḍū’, or ritual cleansing. For 10 points, name this good delivered from the Tigris to ‘Abbāsīd Baghdad for irrigation.

ANSWER: **water** [or **H₂O**; accept drinking **water** or water used for other purposes; accept rain**water** or ground**water** or underground **water**]

<World History>

18. This phenomenon corresponds to the formation of Tollmien–Schlichting waves, which can be understood as unstable modes of the Orr–Sommerfeld equation. The energy associated with this phenomenon in the inertial subrange is a function of wavenumber to the negative five-thirds power. The smallest length and time scales over which this phenomenon can be seen can be found by comparing the kinetic energy associated with it to the dynamic viscosity. Those microscales named for this phenomenon, as well as its energy cascade, were predicted by Kolmogorov. Eddies due to this phenomenon cause an increase in diffusivity, which can cause increased drag. For 10 points, name this type of flow characterized by chaotic and irregular motion, which is contrasted with laminar flow.

ANSWER: **turbulence** [or **turbulent** flow]

<Physics>

19. In a Chilean folktale, only these objects dipped in blood can cure a prince. The Mogollon (“mo-go-YOAN”) culture exported these objects from Paquimé. The shield of the hearth goddess Chantico exemplifies the use of these objects in “mosaics.” The *Dresden Codex* depicts torches bearing these objects, whose identification with flames fools One Death and Seven Death. These earthly objects name a temple in the Ciudadela of Teotihuacán. The word “q’ix” (“keesh”) refers to these objects in the name of the boastful demon Vuqub’ Caqix (“woo-KOOB kah-KEESH”). Many of these objects are depicted on Q’uq’umatz and Kukulkan. These objects were “worked” into the headdress of Moctezuma II after their harvest from a “resplendent” animal that appears on the flag of Guatemala. For 10 points, what green objects adorn the serpent Quetzalcōātl?

ANSWER: **feathers** [or **plumes** or **plumage**; accept **feathered** serpent, **plumed** serpent, Temple of the **Feathered** Serpent, or Pirámide de la Serpiente **Emplumada**; accept **featherwork** or **plumería**; prompt on wings, birds, macaws, parrots, quetzals, eagles, avians, Aves, serpents, snakes, reptiles, animals, guacamayos, loros, papagayos, or águilas by asking “covered in what objects?”] (The first line refers to “The Parrot Prince.” Vuqub’ Caqix is Seven Macaw.)

<Mythology>

20. According to a compatriot, this composer marked a “return to life” by composing a chamber piece whose “funeral dirge” first movement references his unrequited love for the violinist Stefi Geyer. This composer included a “recruiting dance” and a slow movement titled “relaxation” in his *Contrasts* for clarinet trio, written for Benny Goodman. *Aksak* time signatures like 4+3+2 over 8 feature in a string quartet by this composer that characteristically uses an arch form. This composer used the expression marking *mesto* in each movement of his sixth and final string quartet. This composer quoted Shostakovich’s *Leningrad* Symphony in the *intermezzo interrotto* fourth movement of a work that includes a “Game of Pairs.” For 10 points, name this Hungarian composer of *Concerto for Orchestra*.

ANSWER: Béla **Bartók** [or Béla Viktor János **Bartók**] (The quote in the first line is from Zoltán Kodály.)

<Classical Music>

21. This poet’s gloom is parodied in lines like “Woeful is this human lot. / Woe! woe, etcetera” from an Ezra Pound poem titled for him. The speaker of a poem by this author remarks that “when I am dead and gone,” “luckless lads” will wear flowers that he has “hoed and trenched and weeded.” A man claims to “cheer a dead man’s sweetheart, / Never ask me whose” in a poem by this author in which he answers his dead friend’s title question with “Ay, the horses trample.” The image of a “garland briefer than a girl’s” ends a poem by this author whose addressee is told, “The time you won your town the race / We chaired you through the market-place.” For 10 points, name this British poet who included “Is My Team Ploughing?” and “To an Athlete Dying Young” in his collection *A Shopshire Lad*.

ANSWER: A. E. **Housman** [or Alfred Edward **Housman**; accept “Song in the Manner of **Housman**”]

<British Literature>

Bonuses

1. The wet nurse Angèle (“on-JEL”) breastfeeds a member of this family in a painting that Linda Nochlin analyzed in an essay on its “Construction of Work and Leisure.” For 10 points each:

[10h] Name this family whose patriarch watches her daughter play with a toy village at a garden at Bougival (“boo-zhee-VALL”) in an 1881 painting. That member of this family looks out at a harbor through a window in a painting set on the Isle of Wight.

ANSWER: **Manet** family [prompt on, but DO NOT REVEAL, **Morisot** by asking “what was her husband’s surname?”]

[10m] This artist, who often painted her husband Eugène Manet, convinced Eugène’s brother Édouard to paint *en plein air* after studying with Camille Corot. This Impressionist painted her sister Edma and her daughter in *The Cradle*.

ANSWER: Bertha **Morisot** [or Berthe Marie Pauline **Morisot**]

[10e] Nochlin contrasts Morisot’s painting of her wet nurse with representations of female labor as forms of entertainment, as in Edgar Degas’s paintings of women in this profession.

ANSWER: **ballet** dancers [or **ballerinas**; prompt on **dancers**]

<Painting/Sculpture>

2. These terms are often estimated using the best linear unbiased predictor, or BLUP (“bloop”), in contrast to the best linear unbiased estimator, or BLUE (“blue”). For 10 points each:

[10h] Name these terms in a mixed model that contribute variance components. In standard notation, these terms are represented by the vector u in the expression “ Y equals X beta plus Zu plus epsilon.”

ANSWER: **random effects**

[10e] Because random effects are treated as draws from a distribution, they are often seen as frequentist analogs of this man’s paradigm. This man names a rule relating the conditional probabilities of “ A given B ” and “ B given A .”

ANSWER: Thomas **Bayes** [accept **Bayesianism**; accept **Bayes’ rule**]

[10m] Henderson’s equations for the BLUP of a mixed model are essentially an application of this technique, which finds the parameters where the score function is zero, meaning the observed data would be most probable.

ANSWER: **maximum likelihood** estimation [or **MLE**]

<Other Science>

3. Answer the following about the appropriation of saints' days by European nationalists, for 10 points each.

[10e] Poland's independence day coincides with Martinmas, when these animals were traditionally slaughtered. Victorians roasted these waterfowl for Michaelmas, as well as for Christmas before turkeys supplanted them.

ANSWER: **goose** [or **geese**; accept roast **goose** or Christmas **goose**; accept stubble-**goose** or rucklety **goose** or embling **goose**]

[10m] The Battle of Kosovo occurred on Vidovdan, Serbia's feast day for this martyr. "Good King Wenceslaus" is interred in the Prague cathedral of this saint, who, like Saint John, named a medieval dancing mania.

ANSWER: Saint **Vitus** [or **Guy** or **Guido**; accept Saint **Vitus**'s dance; accept St. **Vitus** Cathedral or metropolitan katedrála svatého **Víta**, Václava a Vojtěcha or Metropolitan Cathedral of Saints **Vitus**, Wenceslaus and Adalbert] (Some cases of Saint Vitus's dance were caused by Sydenham's chorea due to rheumatic fever.)

[10h] The Løgting ("LUCK-ting") parliament opens on the anniversary of this saint's death at the Battle of Stiklestad. Oscar I named an order for this saint, whose shrine at Nidaros Cathedral attracted pilgrims after Pope Alexander III canonized him in 1164.

ANSWER: Saint **Olaf** [or Saint **Olave** or **Olaf** II of Norway or **Olaf** II Haraldsson; accept St. **Olav**'s shrine; accept Order of St. **Olav** or Sankt **Olavs** Orden; accept **Ólavsøkao** or **Olsok**] (The Løgting is the parliament of the Faroe Islands. Nidaros was the medieval name of Trondheim.)

<Religion>

4. The Algerian writer Yasmina Khadra used this city as the setting of a second-person novel titled for its "Swallows." For 10 points each:

[10h] Name this city that also provides the setting of several stories in Jamil Jan Kochai's collection *The Haunting of Hajji Hotak*. In another novel, Zalmai is born via a Caesarean section in this city.

ANSWER: **Kabul** [accept *The Swallows of **Kabul*** or *Les Hirondelles de **Kaboul***]

[10e] This author depicted Zalmai's birth in Kabul in *A Thousand Splendid Suns*. This Afghan author also wrote *The Kite Runner*.

ANSWER: Khaled **Hosseini**

[10m] In *The Kite Runner*, Hassan threatens to remove Assef's eye with this weapon as a child in Kabul. The scene foreshadows the novel's third part, in which Hassan's son Sohrab uses this weapon to remove Assef's eye.

ANSWER: **slingshot** [prompt on **stones**, **projectiles**, **missiles**, or brass **balls** by asking "fired with what weapon?"]

<World Literature>

5. Eliza Lucas Pinckney largely relied on the expertise of Africans who were enslaved in the West Indies to cultivate this crop on the Wappoo Plantation near Charleston. For 10 points each:

[10e] Name this cash crop, colonial South Carolina's second-largest export after rice. Enslaved Africans processed this crop by fermenting its leaves in large vats, then drying the mud in bricks to obtain a precious blue dye.

ANSWER: **indigo** [or true **indigo**; or ***Indigofera tinctoria***]

[10m] Wappoo's location between the Ashley and this other river made it ideal for growing indigo. Jemmy led a slave rebellion named for this river that resulted in the passage of the restrictive Negro Act of 1740.

ANSWER: **Stono** River [or **Stono** Creek; accept **Stono** Rebellion]

[10h] Before Africans were extensively taken to South Carolina, these people were often enslaved by deerskin traders. These people fought Governor Craven's militia in 1715 despite losing support from their Catawba and Cherokee allies.

ANSWER: **Yamasee** [or **Yamassee** or **Yemassee**; accept **Yamasee** War]

<American History>

6. Answer the following about the reception of Aesop's fables in English literature, for 10 points each.

[10m] This author wrote a rhyming quatrain version of "The Fox and the Grapes" for Francis Barlow's popular 1687 illustrated edition. This Restoration-era playwright wrote *The Emperor of the Moon* and the prose work *Oroonoko*.

ANSWER: Aphra **Behn** [prompt on Aphra Johnson]

[10e] This woman sums up her view that history would have been different "if women had written stories" with the question "who painted the lion?" from Aesop's fable "The Man and the Lion." This wife from *The Canterbury Tales* tells a story about "what women want most."

ANSWER: Wife of **Bath** [or **Alison**]

[10h] Two exchanges between Aesop and his lover Rhodopè ("rod-OH-pee") appear in a series of dialogues by this Romantic poet. This poet memorialized a lord's daughter in a poem that opens "Ah, what avails the sceptred race."

ANSWER: Walter Savage **Landor** (The collection is *Imaginary Conversations* and the poem is "Rose Aylmer.")

<British Literature>

7. This operator can be constructed as a weighted sum of outer products for each state in a probability distribution. For 10 points each:

[10m] Name this operator from quantum mechanics whose diagonal matrix elements correspond to probabilities for the chosen basis. This operator can be used to describe a state with von Neumann entropy greater than or equal to zero.

ANSWER: **density** operator [or **density** matrix]

[10h] The density matrix corresponds to a state with this property if it has more than one nonzero eigenvalue giving nonzero von Neumann entropy. States with this property cannot be represented with a single wavefunction.

ANSWER: **mixed** [accept **mixture**; accept **impure** or **not pure**]

[10e] This phenomenon leads the reduced density matrix for subsystems to be mixed. This phenomenon can cause nonclassical correlations between measurements described by Bell's theorem, leading to results that cannot be explained with local hidden variables.

ANSWER: quantum **entanglement** [or word forms like **entangled**]

<Physics>

8. In a scene reminiscent of the French New Wave, this actress runs along sidewalks looking for an ATM and trips on her way back. For 10 points each:

[10e] Name this actress who starred as a struggling dancer in *Frances Ha*, a black-and-white film directed by her partner Noah Baumbach. In her directorial debut, *Lady Bird* seeks to escape Sacramento for a college with "culture."

ANSWER: Greta **Gerwig** [or Greta Celeste **Gerwig**]

[10m] Gerwig and Baumbach have directed films in this independent film genre, which is characterized by naturalistic dialogue and a limited soundtrack. This American film genre with an originally pejorative name often focuses on struggling young adults.

ANSWER: **mumblecore**

[10h] Gerwig also played the photographer Abbie, one of the title characters who helps raise Jamie, in this director's film *20th Century Women*. This director's film *Beginners* was inspired by his own father coming out at age 75.

ANSWER: Mike **Mills** [or Michael Chadbourne **Mills**]

<Other Fine Arts>

9. Rae Langton's essay "Duty and Desolation" uses an example involving this hypothetical person to contrast "sane" and "severe" readings of a philosopher. For 10 points each:

[10h] Identify this hypothetical person who asks if your friend is in your house. An essay written in response to Benjamin Constant claims that an "unconditionally commanding law" should guide one's response to this person.

ANSWER: **murderer** at the door [or equivalents such as **killer**; or **Mörder**]

[10e] This German author of *Critique of Pure Reason* argued that lying is always morally wrong, even to a murderer at the door, because it violates the categorical imperative.

ANSWER: Immanuel **Kant**

[10m] Christine Korsgaard uses the murderer at the door to contrast two formulas of the categorical imperative in a book titled for "Creating" this state. Agents in this Kantian state behave as if their actions dictate universal laws.

ANSWER: **kingdom of ends** [or **Reich der Zwecke**; accept *Creating the **Kingdom of Ends***]

<Philosophy>

10. This politician broke with Goukouni Oueddei's FROLINAT rebels amidst Muammar Qaddafi's invasion of his country's mineral-rich Aouzou Strip. For 10 points each:

[10h] Name this president who led Chad for most of the 1980s, before he was ousted in a coup led by Idriss Déby. His regime's massacres of the Hadjerai and Zaghawa led to his conviction of human rights violations by the ICJ in 2016.

ANSWER: Hissène **Habré** [or Ḥusāīn **Habrī**]

[10e] Déby launched his own investigation into the Habré regime with a commission commonly known by this term. Desmond Tutu chaired a commission named after "reconciliation" and this word in post-apartheid South Africa.

ANSWER: **truth** [accept **Truth** Commission or **Truth** and Reconciliation Commission]

[10m] The International Criminal Court indicted Omar al-Bashir – a first for an active head of state – for committing this region's namesake genocide. Janjaweed militias recruited the Abbala people during an insurgency in this region.

ANSWER: **Darfūr** [or **Dārdajū** or **Dārtunjur**; accept **Darfur** Genocide or War in **Darfur**; prompt on **Sudan** or as-**Sūdān**]

<World History>

11. A 2013 novel by Therese Anne Fowler fictionalizes the depression that this novel's author fell under after its poor sales, despite the efforts of editor Maxwell Perkins. For 10 points each:

[10h] Name this novel about the Southern belle Alabama Beggs, whose aspirations to become a ballet dancer are overshadowed by her overbearing husband, the painter David Knight.

ANSWER: ***Save Me the Waltz***

[10m] This author, who wrote *Save Me the Waltz* while institutionalized in Baltimore, was berated by her husband for covering material he planned to use for a novel about an alcoholic psychiatrist and his schizophrenic wife.

ANSWER: **Zelda Fitzgerald** [or Zelda **Savre**; prompt on **Fitzgerald**] (The unnamed novel is *Tender is the Night*.)

[10e] A quote that Zelda said after giving birth inspired this character's line that "the best thing a girl can be in this world [is] a beautiful little fool." A green light symbolizes Jay Gatsby's obsession with this wife of Tom Buchanan.

ANSWER: **Daisy** Buchanan

<American Literature>

12. In a seminal experiment, Karl Duncker demonstrated this cognitive bias by asking subjects to attach a candle to the wall using a box of thumbtacks, with few realizing that the box itself could be fruitfully used. For 10 points each: [10h] Name this cognitive bias in which people experience a mental block against using an object for a non-conventional purpose.

ANSWER: **fixedness** [or functional **fixedness**]

[10e] Functional fixedness was a concept developed as part of this school of psychology, which emphasized the holism of individual perception. This school's German name roughly translates to "pattern."

ANSWER: **Gestalt** psychology

[10m] Forming a positive Gestalt of another person can result in this effect coined by Edward Thorndike, in which positive impressions in one domain spill over into an unrelated domain.

ANSWER: **halo** effect [accept **halo** error]

<Social Science>

13. *Pseudomonas syringae* inhibits the biosynthesis of this compound by mimicking jasmonic acid-isoleucine with the phytotoxin coronatine. For 10 points each:

[10m] Name this compound that induces pathogenesis-related proteins. Plants signal with oil of wintergreen, a volatile methyl ester of this analgesic compound, whose extraction from willow bark led to the synthesis of a common NSAID ("EN-sed").

ANSWER: **salicylic acid** [or **2-hydroxybenzoic acid**; accept acetyl**salicylic acid** or acetyl**salicylate** or **ASA**; accept methyl **salicylate** or methyl **2-hydroxybenzoate**; prompt on **aspirin** by asking "what natural precursor is it derived from?"; prompt on **hydroxybenzoic acid** or **hydroxybenzoate**]

[10h] Salicylic acid signaling mediates a "systemic acquired" mechanism named for this word, which is broader than the hypersensitive response. Avirulence genes often have a "gene-for-gene relationship" with this type of defensive gene.

ANSWER: **resistance** [accept **resistance** genes; accept systemic induced **resistance**; prompt on **R** genes or **SAR** by asking "what does that stand for?"]

[10e] Plant breeders often select for resistance to blights, which are typically caused by oomycetes or members of this spore-producing kingdom that is studied by mycologists.

ANSWER: **fungi** [or **fungus**; accept **fungal** diseases]

<Biology>

14. Renaud Gagné's ("ruh-NOH gahn-YAY's") monograph on the "idea of" this realm analyzes the cosmography of Pindar's third *Olympian*, in which Herakles recalls pursuing the Ceryneian Hind amid this realm's silvery olive trees. For 10 points each:

[10m] Name this peaceful realm of eternal springtime where the Heliades ("hell-ee-AY-dees") become poplars on the Eridanos River. Priests of Apollo rule this realm north of the Riphean Mountains, which is more wholly mythical than Ultima Thule ("THOO-lee").

ANSWER: **Hyperborea** [accept **Hyperboreans** or **Hyperborei**; accept *Cosmography and the Idea of **Hyperborea** in Ancient Greece*]

[10e] Hyperborea is named for its location beyond the Thracian home of Boreas, one of these four directional gods. These subjects of Aeolus include Eurus and Zephyrus.

ANSWER: **winds** [or four **winds**; or **Anemoi**]

[10h] Hesiod's ("HEE-see-id's") *Theogony* claims that the father of the "stern-hearted" winds is this god of dusk, the brother of Pallas and Perses. This primordial deity fathers the five planets and the stars.

ANSWER: **Astraeus** [or **Astraios**]

<Mythology>

15. Gennaro Annese led the Neapolitan Republic after the death of this person in a revolt suppressed by the Duke of Arcos. For 10 points each:

[10h] Name this Neapolitan fisherman who led a 1647 revolt against Habsburg rule in Italy that mirrored tactics used hundreds of years earlier by Cola di Rienzo in Rome.

ANSWER: **Masaniello** [or Tommaso **Aniello**]

[10e] Masaniello revolted in protest of high taxes levied to fund this anti-Habsburg conflict ended by the Peace of Westphalia.

ANSWER: **Thirty Years' War** [or **Dreissigjähriger Krieg**; or Guerra dei **trent'anni**]

[10m] Masaniello's revolt inspired a Daniel Auber ("don-YELL oh-BAY") opera whose 1830 premier in this city sparked a revolution that culminated in the London Conference, which stood until the agreement was derided as a "scrap of paper" in 1914.

ANSWER: **Brussels** [or **Bruxelles** or **Brussel**] (The opera was *La muette de Portici*.)

<European History>

16. Answer the following about the BBC's Last Night of the Proms, for 10 points each.

[10e] A mainstay on the program is the first of this set of military marches by Edward Elgar that evoke the two title characteristics. The trio of that march contains the tune "Land of Hope and Glory," which is commonly featured at graduation ceremonies.

ANSWER: **Pomp and Circumstance Marches** [or **Pomp and Circumstance Military Marches**]

[10m] In 2013, this American became the first woman to conduct the Last Night of the Proms, choosing selections from her mentor Leonard Bernstein's *Candide*. This conductor first rose to prominence by leading the Baltimore Symphony Orchestra for 15 years.

ANSWER: Marin **Alsop**

[10h] In 1995, this composer's saxophone concerto *Panic* received extremely negative press as the first piece of contemporary music to premiere at the Last Night of the Proms. This composer wrote the opera *The Mask of Orpheus* and died in 2022.

ANSWER: Harrison **Birtwistle**

<Classical Music>

17. A 16th-century poet with this first name and the surname Battiferri wrote in various genres, including a large number of spiritual sonnets. For 10 points each:

[10m] Give the first name of a different 16th-century poet with the surname Terracina. Another poet described meeting someone with this name, whose surname may have been De Noves ("day NO-vess"), during mass at Avignon.

ANSWER: **Laura** [accept **Laura** de Noves; accept **Laura** Battiferri; accept **Laura** Terracina] (The final clue refers to Petrarch's Laura.)

[10e] Laura Terracina's chivalric romance depicts this Christian paladin who fights for Charlemagne. This character is depicted in a frenzy, or "furioso," in an epic poem by Ludovico Ariosto.

ANSWER: **Orlando** [or **Roland**; accept **Orlando Furioso**]

[10h] Another Renaissance-era epic poem about Orlando is *Orlando innamorato*, which this 15th-century Italian poet wrote in vernacular dialect.

ANSWER: Matteo Maria **Boiardo**

<European Literature>

18. The discovery of this molecule led to rapid growth in organometallic chemistry and a Nobel Prize for Fischer and Wilkinson. For 10 points each:

[10m] Name this sandwich compound in which two cyclopentadienyl ligands are coordinated to the central iron atom.

ANSWER: **ferrocene**

[10h] This model, which is named for three chemists, helped explain the structure and remarkable stability of ferrocene. This model describes donation of electron density from ligands to transition metal d-orbitals in a form of pi backbonding.

ANSWER: **Dewar–Chatt–Duncanson** model [or **DCD** model]

[10e] The Dewar–Chatt–Duncanson model is applicable to coordination compounds with these molecules as ligands due to their pi bonds. These molecules contain at least two sp²-hybridized carbon atoms due to the presence of a double bond.

ANSWER: **alkenes** [or **olefins**]

<Chemistry>

19. The Coral Triangle surrounds a natural region named for this man, which provides the name of a British conservation research non-profit. For 10 points each:

[10m] What Victorian naturalist names a biogeographical region between the former landmasses of Sunda and Sahul? This early theorist of speciation drew a line through the Lombok Strait based on fieldwork in the Malay Archipelago.

ANSWER: Alfred Russel **Wallace** [accept **Wallace's** Line; accept **Wallacea** or Operation **Wallacea**; prompt on **OpWall**]

[10h] Wallace called New Guinea the country of the cassowary and these arboreal macropods. Tim Flannery's ecological history *The Future Eaters* describes the Kuku Yalanji hunting Bennett's species of these animals in the Daintree Rainforest.

ANSWER: **tree-kangaroos** [or **boongary**; or **Dendrolagus**; accept Bennett's **tree-kangaroo** or **Dendrolagus bennettianus**; prompt on **kangaroos**, **marsupials**, **mammals**, or **Diprotodontia**] (The Daintree Rainforest is in Queensland.)

[10e] In *Chasing Kangaroos*, Flannery narrates how humans disseminated marsupials like wallabies across Melanesia, including to this archipelago named for a wise and wealthy biblical king.

ANSWER: **Solomon** Archipelago [or the **Solomons**; accept **Solomon** Islands] (Wallabies are attested from a bone on Buka Island, which is considered part of the Solomons but is part of Bougainville rather than the country of that name.)

<Geography>

20. After Hé Jin (“huh jeen”) was executed by the Ten Attendants, who were people of this type, his companions stormed the Northern Palace and indiscriminately killed over two thousand people of this type. For 10 points each:
[10e] Name these infertile people who often exerted power over the Chinese court as civil servants beginning during the Qin dynasty.

ANSWER: **eunuchs**

[10h] The Ten Attendants had earlier worked with Hé Jin to deal with this utopian uprising based in Shāndōng, which coincided with a similar movement named for its modest initiation fee.

ANSWER: **Yellow Turban** Rebellion [or **Yellow Scarves** Rebellion; or **Huángjīn** zhī luàn] (Members had to pay the eponymous Five Pecks of Rice to join the other movement.)

[10m] The Yellow Turban Rebellion preceded the division of the Hàn state into Shǔ Hàn, Eastern Wú, and a state named for this general who served as Chancellor of the Eastern Hàn after the death of Dǒng Zhuó.

ANSWER: **Cáo** Cāo (“tsao tsao”) [or **Mèngdé**; accept **Cáo Wèi**]

<Other History>

21. Answer the following about the Arab polymath Ibn Khaldūn’s economic and social thought, for 10 points each.

[10h] This Arabic-language term was popularized by Ibn Khaldūn’s *Muqaddimah*, which uses it to describe the bonds that link a society together and claims that this concept is strongest among nomadic peoples and weakest in an advanced civilization.

ANSWER: ‘**asabiyyah** [or ‘**asabiyya**]

[10m] Ibn Khaldūn is acknowledged as one of the progenitors of this theoretical construct, which plots an inverse U-shaped relationship between tax revenue and the tax rate.

ANSWER: **Laffer curve**

[10e] Ibn Khaldūn’s early description of the division of labor has drawn comparisons to this later thinker’s example of a pin factory in *The Wealth of Nations*.

ANSWER: Adam **Smith**

<Social Science>