Packet 6

Tossups

1. **By bounding the absolute value between two functions by an integrable function, a theorem named for this property can be proven using Fatou's lemma. Differentiation under the integral sign can be proved using the mean value theorem followed by Lebesgue's ("luh-BEG's") dominated [this property] theorem. Equicontinuity and being uniformly bounded is required for this property to hold for a group of values according to the Arzela–Ascoli theorem. Numbers denoted M-sub-n are considered in the (*)** Weierstrass ("VYE-er-shtross") M-test for this property, which Cauchy ("koh-SHEE") sequences also have. In real analysis, the pointwise type of this property is weaker than the uniform type of this property. The alternating series test and ratio test are used to determine if a series has this property. For 10 points, name this property of sequences that asymptotically approach a limit.
ANSWER: **convergence** [or word forms such as **convergent** sequence; accept dominated **convergence** theorem or uniform **convergence** or pointwise **convergence**]
<Other Science: Math, AK>

2. **A sticky note detailing a plan to disrupt these facilities said "SSL added and removed here," with a smiley face pointing to a box labeled "GFE," and was leaked from the MUSCULAR program. Project Natick plans to build one of these facilities underwater in California. The largest one of these facilities, at over 3.5 million square feet, is the Switch SuperNAP in Las Vegas. The world's highest concentration of the "colo" ("CO-lo") type of these facilities, which are rented out, is in Ashburn, Virginia. In 2010, (*)** Greenpeace began evaluating the energy efficiency of companies using these facilities in the #ClickingClean initiative. Transparency in the design of these facilities is advocated for by the Open Compute Project started by Facebook. For 10 points, name these facilities containing rows of cooled, rack-mounted servers that store large amounts of information.
ANSWER: **data center**s [or **server farm**s or **web farm**s or **computer farm**s or cloud **computing center**s or **server cluster**s; accept **colo** or **colocation data center** before "colo"; prompt on servers or server rooms or computer hubs or web hosts or web hosting providers or networks or data warehouses; do not accept or prompt on "farm" or "supercomputer" or "network operations center" or "NOC" or "NAP" or "IXP" or "ISP"]
<Other/Misc Academic, AK>

3. **In 1996, a thesis concerning a hypothetical one of these phenomena was published by Walter Pitman and William Ryan in *The New York Times*. A time period named for these phenomena occurred before the "Season of Emergence" and after five intercalary days. A notable one of these phenomena mentioned in the Sumerian king list occurs during the reign of king Ziusudra ("zee-oo-SOO-drah"). In the Roman era, these phenomena were predicted with the assistance of large pillars at (*)** Elephantine, enabling accurate calibration of the *akhet* ("AH-khet") on the calendar. Amenemhat III executed a massive project in the Faiyum depression to control these phenomena, which were widely associated with the annual rebirth of Osiris. The culture hero Utnapishtim survived an example of, for 10 points, what events that occurred annually on the Nile River?
ANSWER: **flood**s [or **deluge**s or **inundation**s; accept Black Sea **deluge** hypothesis; do not accept or prompt on "storms" or "rains"] (The first clue refers to the Black Sea deluge hypothesis.)
<Ancient History, WA>

4. **An aria from this opera abruptly shifts from 2/4 ("two-four") to 6/8 ("six-eight") time after two characters sing the word "Andiam!" ("on-dee-AHM") together. This opera's overture imitates the beginning of Gluck's *Alceste* by beginning with a loud *tutti* chord, followed by crashing syncopated chords in the violins and violas; that D minor overture transitions without pause into an aria in which a man describes working "night and day." Frédéric Chopin's set of variations on an (*)** aria from this opera inspired Robert Schumann to exclaim

"Hats off, gentlemen – a genius!" A woman in this opera begs her husband to stop leading an angry mob in "Batti, batti, o bel Masetto." In this opera, the duet "Là ci darem la mano" ("LAH chee dah-REM lah MAH-noh") is sung by Zerlina and the title character, who is dragged to hell in Act III. For 10 points, name this Mozart opera about a womanizer.
ANSWER: **_Don Giovanni_** [do not accept or prompt on "Don Juan"]
<Classical Music/Opera, WA>

5. **Scholars debate whether a lost epic regarding attempts to seize this title should be attributed to Antimachus of Teos or Antimachus of Colophon. Telephus killed a holder of this title after the Greeks accidentally attacked him on their way to Troy. This title was also held by Labdacus, who died in a border war against Pandion and was the son of Polydorus. A lost epic describes how Thersander gained this title after Laodamas was ousted in the war of the (*)** Epigoni. A future holder of this title exiled himself from Corinth after interpreting a prophecy as claiming that he would kill Polybus. Later, that holder of this position unknowingly killed Laius and then had relations with Jocasta, his mother. For 10 points, give this title held by rulers of a certain seven-gated Greek city such as Cadmus and Oedipus.
ANSWER: **king** of **Thebes** [accept equivalents such as **Theban king** or **ruler** of **Thebes**]
<Mythology, RRP>

6. **To design drugs that target specific members of this class of enzymes, the "bump-and-hole" approach was created. Dendrograms are used to depict the selectivity score of inhibitors of these enzymes. Conserved lysine and aspartate residues help stabilize a pentavalent intermediate in the active site of these enzymes. The (*)** Philadelphia chromosome codes for a constitutively ("CON-stih-TOO-tiv-lee") active form of one of these enzymes that are inhibited by drugs such as Imatinib and Dasatinib. RAS activates a pathway involving a cascade of these enzymes that include RAF and ERK. JAKs are members of this family of enzymes that can act on specific serine, threonine, or tyrosine residues of proteins. A cyclin-dependent family of these enzymes regulates the cell cycle. For 10 points, name this class of enzymes that phosphorylates proteins.
ANSWER: **kinase**s [accept Just Another **Kinase**; accept tyrosine **kinase**; prompt on JAKs and TKs with "what does the K stand for?"]
<Biology, RRP>

7. **This fashion house forced out its second director after he was conscripted shortly after a poorly received 1960 beatnik-inspired show. The feature item from this house's 1955 line was a flared jacked over a dress with a full, pleated skirt, a design that introduced its designer's "A-Line" style that was popularized with the 1958 "Trapeze Line." (*)** Coco Chanel quipped "Only a man who never was intimate with a woman could design something that uncomfortable" about one of this house's shows. This house, which is credited with inventing the modern pencil skirt, is often credited with revitalizing post-World War II French fashion with its 1947 New Look show. This house's second director, who used his own label to popularize female tuxedos, was Yves Saint Laurent. For 10 points, name this fashion house named for its founder, Christian.
ANSWER: Christian **Dior** SE
<Other Art: Fashion, EL>

8. **This tribe's first newspaper was created by Betty Mae Tiger Jumper. This tribe's numerous cowboys established the Brighton Agricultural and Livestock Enterprise. Members of this tribe began to be heavily employed in tourism after the Tamiami Trail was built near their land. In 2007, this tribe bought the Hard Rock Cafe franchise. This tribe opened a high-stakes bingo parlor in 1979, the first Native American casino in the US. Many members of this tribe escaped white settlers by moving to unwanted land in the (*)** Great Cypress Swamp. This tribe has historically excluded descendants of maroons, such as those who occupied Negro

Fort, who identify as its "Black" members. Osceola ("OSS-ee-OH-luh") once led, for 10 points, what tribe that names the sports teams of Florida State?
ANSWER: **Seminole**s [or **Seminole** Tribe of Florida; accept Black **Seminole**s]
<US History, WA>

9. The narrator of a novel by this author frequently recounts his role in creating the grandiose Migi-Hidari restaurant, though he now only frequents Mrs. Kawakami's bar. In that novel by this author, that character turns the painting "Complacency" into a propaganda painting that juxtaposes three poor boys and three soldiers titled "Eyes on the Horizon." A girl in a novel by this author dreams of working in an "open-plan office" and claims that "we're modelled from trash" after spying on a woman in an (*) art gallery who may be her "possible." A fictional Judy Bridgewater song titles that novel by this author, in which Ruth drives apart Tommy and her "carer" Kathy, only allowing their love to develop shortly before he "completes" his organ donations as a clone. For 10 points, name this author of *An Artist of the Floating World* and *Never Let Me Go*.
ANSWER: Kazuo **Ishiguro**
<Long Fiction, JC>

10. A philosophical work by the *bhikkhu* Ñāṇananda ("NYAH-nuh-NUN-duh") that espouses the free nature of dhamma is titled after this concept. The sutra named after this concept expounds upon the Buddha-nature and is central to the Shinnyo-en ("sheen-nyoh-en") school. The *Bhagavad Gita* defines the goal of human life as achieving a version of this concept that involves forming a relationship with the Supreme, or Brahman. The Vimalakirti Sutra dismantled the belief present in several sutras that this concept was inaccessible to (*) women. When preceded by the prefix *pari*, this term refers to the final death of the body. This concept is named by analogy to extinguishing an oil lamp. It is similar to the concepts of *mukti* and *moksha* and can be described as the "end of suffering." For 10 points, name this Buddhist term for the release from *samsara*, or the cycle of rebirth.
ANSWER: **nirvana** [or **nibbana**; accept **moksha** or **mukti** before "mukti"; accept ***Nibbana-The Mind Stilled**￼* or ***Nirvana Sutra**￼*; prompt on enlightenment or buddha-hood]
<Religion, PC>

11. Georges Clemenceau asked Félix Faure ("fay-LEEKS FOR") to buy a set of paintings of one of these structures that were originally exhibited at the Durand-Ruel ("due-RAWN rue-ELL") gallery. An expressionist woodcut of one of these structures was made for the cover of the Bauhaus Manifesto by Lyonel Feininger ("FIE-ning-er"). An artist rented a changing room above a shop owned by Monsieur Maquit ("mah-KEE") to paint one of these structures. A painting depicts the River Nadder and a rainbow arcing across one of these structures (*) "from the Meadows," while another painting from the "grounds" places that white structure's spire between two trees. Another artist drew on his series of *Haystacks* to create over thirty paintings depicting how varying light levels affected the façade of one of these buildings. For 10 points, identify this kind of building that John Constable and Claude Monet painted in Salisbury and Rouen ("roo-AWN"), respectively.
ANSWER: **cathedral**s [or Gothic **cathedral**s; accept Salisbury **Cathedral** or Rouen **Cathedral**; prompt on churches]
<Painting/Sculpture, AK>

12. In 2017, a team led by Chris Clarkson reported finding evidence of human settlement in this modern-day country 65,000 years ago in caves at Madjedbebe ("MAH-jed-beh-beh"). This is the [emphasize] *larger* of the two countries studied in *The Future Eaters*, in which the shaping of biodiversity by human consumption is analyzed by Tim Flannery. This is the [emphasize] *easternmost* country settled in the "coastal migration" scenario of early human dispersal. Much of this country's scrubland was burned in the (*) agricultural practice of "firestick farming." Anthropogenic extinction of megafauna in this modern-day country may be reflected by mythical creatures such as *bunyips*, which feature heavily in mythology set during the *altyerrenge*

("all-chuh-RANG-uh") or Dreamtime. For 10 points, name this country whose native peoples are collectively called Aborigines.
ANSWER: **Australia** [or Commonwealth of **Australia**]
<Social Science: Anthropology, WA>

13. **This author ends a poem with the lines, "the Book on the writing table; / the hand in the breast-pocket"** **after quoting Daniel Webster about the "enterprise" of "Marriage." This poet muses on the irony of** **C. J. Poole putting up danger signs in a poem set in a peaceful town with "eight stranded whales to look at" in** **which "Durer would have seen a reason for living." After taking a trip to Washington state, this author wrote** **a poem comparing the glacier on Mount Rainier to "An (*)** Octopus" "of ice." A poem by this author lists "the base- / ball fan" and "the statistician" among things that "we cannot understand." That poem by this author calls ideal members of a certain profession "literalists of / the imagination" who create "imaginary gardens with real toads in them." For 10 points, name this poet who wrote "The Steeple-Jack" and declared, "I, too, dislike it" in "Poetry."
ANSWER: Marianne **Moore**
<Non-Epic Poetry, JC>

14. **When he stopped on this island to study languages, the monk Yijing made records of what he called the** **"Kunlun peoples." It's not Sri Lanka, but a derivative of the Pallava script is recorded by 7th-century** **inscriptions found on this island at Talang Tuwo and Kedukan. The *Sulalatus Salatin* records how the** **kingdom of Pannai ("puh-nye") on this island was a vassal of the Chola Empire when the latter was at the** **height of its thalassocratic ("THAL-uh-socratic") power. The city of Palembang on this island was the seat of** **power of the (*)** Srivijaya ("SHREE-vee-JAH-yah") empire. Controlling a strategically important passage between this second-largest member of the Greater Sunda islands and the mainland motivated Stamford Raffles to found a settlement. The Sultanate of Malacca controlled the straits between Asia and, for 10 points, what westernmost major island of Indonesia?
ANSWER: **Sumatra** [or **Sumatera**]
<World History, WA>

15. **This philosopher's biographer John Marenbon cited him and his student John of Salisbury as examples of** **people who advocated the virtuosity of ancient pagans. To argue against essential realism, this philosopher** **stated that "being a man" is a linguistic concept that cannot be inferred to be a physical or metaphysical** **universal. This philosopher's views on logic are presented in his *Glosses on Porphyry* and a treatise called the** **_Dialectica_. Peter (*)** Lombard's *Four Books of Sentences* systematize an approach that this philosopher laid out in a book that juxtaposes 158 contradicting statements by Church fathers. This man's autobiographical *History of My Calamities* describes his romance with a nun. For 10 points, name this medieval French author of *Sic et non* who had an affair with Héloïse.
ANSWER: Peter **Abelard** [or Petrus **Abelardus**]
<Thought, WA>

16. **A woman in this play is told that the blood on her forehead is a jeweled crown. That woman in this play** **claims that the dead daughter of a man she killed will be the only one to greet him by the wailing waters of** **the underworld. A woman in this play calls Apollo the god of death and asks what evil home she has been led** **to, to which the Chorus responds that she is in the House of (*)** Atreus. Fearing hubris, a man in this play refuses to walk across a purple-colored carpet. The body of the seeress Cassandra is found dead alongside the male lead of this play, which begins a cycle that ends with the trial of that man's son on the Areopagus before the Furies. For 10 points, name this first play of the *Oresteia* cycle written by Aeschylus, in which the title character is murdered by his wife Clytemnestra.
ANSWER: ***Agamemnon***

17. **A simple equation for modeling transport in these systems can be derived by applying a Laplace transform to Fick's laws and choosing boundary conditions to represent semi-infinite linear diffusion. A common analytic setup uses three of these things, one of which is working, one of which is the counter, and one of which uses calomel as a standard reference. More energy is required to drive these systems than would normally be thermodynamically predicted when an (*)** overpotential is present. Two dissimilar metals may form one of these systems, resulting in corrosion, when they are placed near each other in solution. A salt bridge usually connects the components of these systems, which can be measured using the Nernst equation. For 10 points, identify these cells that use chemical reactions to produce electrical energy.
ANNSWER: __voltaic cell__s [or __galvanic cell__s or __electrochemical cell__s or __electrode__s; prompt on partial answer; accept __voltaic__ or __galvanic__ after "cell" is read; prompt on battery or potential; anti-prompt on fuel cells by asking "can you be less specific?"]
<Chemistry, WA>

18. *Description acceptable.* **Sydney Silverman campaigned for a 1965 partial implementation of this policy in the UK, which fully implemented it when it became a party to Protocol 13 of the ECHR. The 1981 Act that implemented this policy under François Miterrand's government is sometimes named for Robert Badinter ("ro-BAIR bah-dan-TAIR"). In Romania, this policy was implemented on Christmas Day 1989 just after the demise of the Ceauşescus ("chow-SHESS-kooz"). In the US, it was implemented for four years by the (*)** *Furman* decision, but reversed in *Gregg v. Georgia* under a new Eighth Amendment ruling, prompting Henry Schwarzschild to found a "National Coalition" for this policy. If implemented in the US, this policy would prohibit the only punishment specified in the Constitution, which is for treason. For 10 points, identify this policy under which a country ceases executing people.
ANSWER: __abolition__ of the __death penalty__ [accept synonyms for "abolition" such as __eliminating__; accept synonyms for "death penalty" such as __capital punishment__; prompt on criminal justice reform; do not accept or prompt on "death penalty" alone]
<Continental post-600 History, WA>

19. **H. L. Mencken's 1933 review of this book compares its author to William Jennings Bryan. Don Bartlett's translation of a series that shares its title with this book uses such titles as** *A Man in Love* **and** *Boyhood Island***. This book begins as a** *bildungsroman* **("BILL-doongs-ro-MAHN") set "In the House of My Parents" before outlining philosophical views such as "Causes of the Collapse." Its title was borrowed to title a series of six autobiographical novels by the (*)** Norwegian author Karl Knausgård ("k'NOUSE-gor"). The second chapter of this book describes "years of studying and suffering" in which the author failed to enter the Academy of Fine Arts in Vienna. Sylvia Plath's "Daddy" describes its title figure as a "man in black" with a "look" like this book. It proposes the concept of *Lebensraum* ("LAY-binz-rowm"). For 10 points, name this autobiographical book by Adolf Hitler.
ANSWER: *__Mein Kampf__* [or *__My Struggle__* or *__Min Kamp__*]
<Misc. Lit, WA>

20. **Uniquely, the [emphasize] square of these particles' masses, rather than the normal mass, is typically used when calculating their mass with the Gell-Mann–Okubo formula, reducing the error to about 3 to 5 percent. They're not quarks, but one of these particles was observed when a team that was testing the GIM mechanism observed a peak at 3.1 giga-electron-volts. Depending on their parity value, some of these particles may be called "pseudovector" or "vector." For observations of specific examples of these particles, Nobel Prizes were awarded to (*)** Richter and Ting, as well as to the experimental proof of CP violation conducted by Cronin and Fitch. These highly unstable hadrons have integer values of spin, making them bosons, unlike

particles with an odd number of constituents such as baryons. A quark and an antiquark compose, for 10 points, what particles exemplified by kaons and pions?

ANSWER: **meson**s [accept pi **meson**s or vector **meson**s or J-psi **meson**s; prompt on <u>hadron</u>s or <u>boson</u>s; anti-prompt on <u>pion</u>s or <u>kaon</u>s by asking "can you be less specific?"]

<Physics, WA>

Bonuses

1. A god in this country is usually shown carrying a magic hammer, and represents a syncretization of the death god Mahakala and a traditional hero known as the "Great Land Master." For 10 points each:
[10] Name this country where that god figures among a group of seven who sail around in a great treasure ship.
ANSWER: **Japan** [or **Nihon**-koku or **Nippon**-koku]
[10] One of Japan's Seven Lucky Gods is Bishamonten ("bee-sha-MOAN-ten"), who is based on a protector figure in this religion called Vaisravana ("vye-SHRUH-vuh-nuh"); another of them is Budai, a semi-historical priest of this religion with Mahayana and Theravada branches.
ANSWER: **Buddhism** [or Zen **Buddhism**]
[10] Among the Seven Lucky Gods is Benzaiten ("ben-zye-ten"), a goddess who plays a string instrument called a *biwa*. Benzaiten derives from this goddess, who plays a string instrument called a *veena* and rides a swan.
ANSWER: **Saraswati** [or **Sarasvati**]
<Mythology, WA>

2. This sculptor moved to Florence in the 1830s and brought American culture to European audiences with pieces like *California* and *The Last of the Tribe*. For 10 points each:
[10] Name this sculptor whose best-known piece, *The Greek Slave*, inspired an Elizabeth Barrett Browning sonnet when displayed at the London World's Fair in 1851.
ANSWER: Hiram **Powers**
[10] While in Italy, Powers befriended this American sculptor, who modeled his statue of George Washington enthroned on the chryselephantine statue of Zeus at Olympia.
ANSWER: Horatio **Greenough**
[10] Hiram Powers's student Edmonia Lewis gained attention back in the US with a sculpture of *The Death of Cleopatra* displayed during a major art exhibit in this US city. Thomas Eakins ("AY-kins"), who was from this city, painted his friend Max Schmitt on a boat on its Schuylkill ("SKOO-kull") River.
ANSWER: **Philadelphia** [or **Philly**]
<Painting/Sculpture, WA>

3. A 1983 novel by Rachel Ingalls titled *Mrs. [this character]* presaged the movie *The Shape of Water* with its story about a California housewife having an affair with 6-foot-7 frog-man. For 10 points each:
[10] Name this "mooncalf" who is "not honored with a human shape." A poem narrated by this character imagines making a live bird out of clay and replacing its broken leg with three legs.
ANSWER: **Caliban** [accept *Mrs. **Caliban***; accept "**Caliban** Upon Setebos"]
[10] This poet of "Caliban Upon Setebos" wrote other dramatic monologues such as "Pippa Passes" and "My Last Duchess."
ANSWER: Robert **Browning**
[10] Louis Untermeyer wrote a poem titled for "Caliban" in these places that implores, "God, if You wish for our love, / Fling us a handful of stars!" Émile Zola described a blind horse that spent its entire life in one of these places in the novel *Germinal*.
ANSWER: **coal mine**s [prompt on just <u>mine</u>s]
<Misc. Lit, JC>

4. This philosopher emphasized that Adam Smith's theories must be read in the context of Smith's moral philosophy in an introduction to *A Theory of Moral Sentiments*. For 10 points each:
[10] Name this philosopher and economist who introduced the concept of capability in the Tanner Lecture "Equality of What?" and demonstrated the "liberal paradox" regarding social welfare.
ANSWER: Amartya **Sen**

[10] Sen's "capability approach" to welfare seeks to equate this concept with establishing a level of "midfare" for all members of society. This concept is often contrasted with a "procedural" counterpart, which emphasizes fairness and transparency in dispute resolution and allocation.

ANSWER: **distributive justice** [prompt on partial answer; do not accept or prompt on "redistributive justice"]

[10] Sen contrasted his own views on distributive justice with those of this author, whose book *A Theory of Justice* attempts to solve problems of distributive justice through the "original position" thought experiment.

ANSWER: John **Rawls**

<Thought, WA>

5. In twin studies, Falconer's formula relates one version of this quantity to the monozygotic and dizygotic correlations. For 10 points each:

[10] Name this quantity with narrow-sense and broad-sense definitions symbolized by either a lowercase or uppercase h squared. It measures the amount of phenotypic variance attributable to genetic variance.

ANSWER: **heritability** [or broad-sense **heritability**; or narrow-sense **heritability**]

[10] The broad-sense heritability can be calculated as the total variance in this concept over the total variance in phenotype. This concept, which refers to an organism's genetic information, is usually contrasted with phenotype.

ANSWER: **genotype**

[10] Heritability is often calculated in ANOVA experiments, which were introduced by this scientist. He names the principle that sex ratio is very close to 1:1 ("one-to-one") in nature.

ANSWER: Ronald **Fisher** [or Sir Ronald Aylmer **Fisher**]

<Biology, AK>

6. This Biblical book names a theoretical source of tradition from the Pentateuch that contrasts with the epic narrative "Yahweh-Elohist" source and the practice and record-heavy "Priestly" source. For 10 points each:

[10] Name this book of the Bible whose first letter denotes a source that is grouped with the J, E, and P sources in literary analyses of the Pentateuch.

ANSWER: Book of **Deuteronomy** [prompt on the D source]

[10] The rules-heavy nature of the deuteronomistic source is reflected in this ruleset, which appears in both Exodus and Deuteronomy. Its first rule states, "Thou shalt have no other gods before me."

ANSWER: the **Ten Commandments** [or the **Decalogue**]

[10] All four sources of the Pentateuch are prominent in Exodus 12 to 13, whose subject matter ranges from the story behind a candlelit search on this holiday, to the ritualistic instruction for a child to ask "What makes this night different from all other nights?"

ANSWER: **Passover** [or **Pesach**]

<Religion, JC>

7. Historian Thomas Noel, who is popularly known by the moniker "Doctor" [this state], is one of the best-known experts on its local history despite being born in Massachusetts. For 10 points each:

[10] Name this state that was known as the "World's Sanatorium" for much of the 19th century, since many people came to get fresh air and heal from tuberculosis. Events in its history include the Ludlow Massacre.

ANSWER: **Colorado**

[10] Colorado's state historian is Patty Limerick, whose best-known book of western history is titled for this process. This word also happens to be the surname of a biographer of Stalin who wrote such books as *The Great Terror* and *The Harvest of Sorrow*.

ANSWER: **conquest** [accept *The Legacy of **Conquest*** or Robert **Conquest**]

[10] Settlement of Colorado dramatically expanded after the opening of mines at Leadville after this commodity was discovered there. A lot of this commodity was found in the Comstock Lode in Nevada.

ANSWER: **silver**

<US History, WA>

8. A section of this play titled "I Was Twelve, My Mother Slapped Me" tells firsthand accounts of the first periods of multiple women delivered by a single speaker. For 10 points each:
[10] Name this Eve Ensler anthology that catalogues sexual issues from the eyes of women.
ANSWER: The *Vagina Monologues*
[10] This two-time Pulitzer winner wrote *Ruined*, a play about women forced to sell their bodies in the war-ravaged Congo. This playwright wrote about poor residents of Pennsylvania coal country in the Pulitzer-winning *Sweat*.
ANSWER: Lynn **Nottage**
[10] This author has cited an attempt to reconcile the idea of the black female body being undesirable as one of the reasons why she discusses her rape when she was eight years old in her autobiography *I Know Why the Caged Bird Sings*.
ANSWER: Maya **Angelou** [or Marguerite Annie **Johnson**]
<Drama, JC>

9. Most of Derek Bok's work concerns the industry dominated by these places, including his 2007 book that called these places "underachieving." For 10 points each:
[10] Identify these places that Thorstein Veblen said were dominated by business interests in America. Among the findings of the report *A Nation at Risk* was that Americans were being inadequately prepared for these places.
ANSWER: **universities** [or **college**s; accept *Our Underachieving **Colleges***; prompt on institutions of higher learning or schools]
[10] Bok analyzed the social responsibilities of the university in a work titled "Beyond" this structure. This two-word metaphor is named for a precious material that elephants are hunted for.
ANSWER: **ivory tower** [accept *Beyond the **Ivory Tower***]
[10] A long-time UCLA scholar with this surname wrote the international study *The Higher Education System*, which applied Erving Goffman's concept of "cooling out" to higher education. This is also the first name of the author of *The Uses of the University*.
ANSWER: **Clark** [accept Burton **Clark** or **Clark** Kerr]
<Social Science: Other, WA>

10. Some examples of these phenomena occur when the driving frequency of a system equals one of that system's natural frequencies. For 10 points each:
[10] Name these patterns whose "standing" variety has amplitude profiles that oscillate in time, but not in space.
ANSWER: **wave**s [accept standing **wave**s or standing **wave** patterns or stationary **wave**s; prompt on harmonics]
[10] In three dimensions, standing waves can be represented using these mathematical functions. The wavefunction of a rigid rotor can be described entirely by these functions.
ANSWER: **spherical harmonic**s [prompt on partial answer]
[10] The angular part of this mathematician's namesake equation, which is a special case of the more general Poisson ("pwah-SAWN") equation, is solved by spherical harmonics.
ANSWER: Pierre-Simon, Marquis de **Laplace** [accept **Laplace**'s equation or **Laplacian**]
<Physics, WA>

11. This concept is often compared with the similar concept of an *idée fixe* ("ee-day FEEKS"). For 10 points each:
[10] Name these short, recurring phrases that are common in Late German Romantic music. Claude Debussy mockingly compared the use of these phrases in opera to the use of of "calling cards" to introduce each character.
ANSWER: **leitmotif**s ("LIGHT-moh-teef") [or *leitmotiv*; prompt on motifs]
[10] This composer, who personally preferred the term *Hauptmotif* ("HOWPT-moh-teef"), used *leitmotifs* throughout his operas *Lohengrin* and *Parsifal*.

ANSWER: Richard **Wagner**

[10] This opera modifies the basic concept of a *leitmotif* by giving each character his or her own characteristic tone row, all of which are derived from a single tone row based on a diatonic hexachord. This opera's character Alwa ("AHL-vah") is often considered to be a representation of the composer himself.

ANSWER: ***Lulu*** (by Alban Berg)

<Classical Music/Opera, WA>

12. Name these poets who took prominent roles in European politics, for 10 points each.

[10] This poet, regarded as the second-most famous European behind Napoleon in his life, maintained a public stance of skepticism against German nationalism through the Napoleonic Wars. He also wrote *Faust*.

ANSWER: Johann Wolfgang von **Goethe**

[10] This poet, often referred to as "Il Profeta" or "The Prophet," established a proto-fascist independent state in Fiume ("FYOO-may") in 1919 until he was forced out after the signing of the Treaty of Rapallo.

ANSWER: Gabriele **D'Annunzio**

[10] This major advocate of the *tricoleur* helped organize the Second Republic in meetings at the Hôtel de Ville and served as its Minister of Foreign Affairs. He wrote an influential 1847 *History of the Girondins* ("jee-ron-DANS").

ANSWER: Alphonse de **Lamartine** [or Alphonse Marie Louis de Prat de **Lamartine**, Knight of Pratz]

<Continental post-600 History, WA>

13. The acceptor TCNQ and donor TTF combine to form a complex named after this process. For 10 points each:

[10] Name this process that can occur in ligand ("LIG-und")-to-metal or metal-to-ligand types. This process is often identified through solvatochromism ("solvato-chromism"), such as the deep purple color of the permanganate ion.

ANSWER: **charge-transfer** [or **charge-transfer** transition or **charge-transfer** bands; accept answers that refer to **electron transfer**; prompt on CT; prompt on electron transfer]

[10] Whether the central metal atom has a high or low value for this quantity determines whether it will participate in ligand-to-metal or metal-to-ligand charge transfer. Oxygen usually has a value of negative 2 for this quantity, which is the number of electrons that an atom lost during bonding.

ANSWER: **oxidation state** [or **oxidation number**]

[10] Electronic transitions in charge-transfer complexes are subject to these statements. One of these statements named for Otto Laporte forbids electronic transitions to and from d orbitals in centrosymmetric octahedral complexes.

ANSWER: **selection** rules [accept Laporte **selection** rule]

<Chemistry, AK>

14. A set of poems in this form repeatedly commands "fill the cup!" in enjoining the addressee to celebrate life with the author. For 10 points each:

[10] Give either the common English term or the original language term for this form. It was popularized in English by a free-verse translation of lines such as "Oh, wilderness were Paradise enow!"

ANSWER: **quatrain**s [or **ruba'i** or **ruba'iyat**]

[10] Though the *ruba'i* is a typically Persian poetic form, its name derives from this language's word for "four." Poetic forms in this language were adapted into many other languages thanks to the caliphate's expansion.

ANSWER: **Arabic** [or al-**'arabiyyah**]

[10] Many Arabic forms were adapted by poets using this language, such Mirza Ghalib, who wrote *kulliyat* in both this language and Persian. This language's modern poets include Agha Shahid Ali, who wrote the collection *The Country Without a Post Office*.

ANSWER: **Urdu** [or **Urdu**-Hindi or Hindi-**Urdu**; prompt on Hindustani; do not accept or prompt on "Hindi" alone]

<Non-Epic Poetry, WA>

15. This ballet's premiere disgusted reviewers from the newspaper *Le Figaro*, who called its main character "incontinent, with vile movements of erotic bestiality and gestures of heavy shamelessness." For 10 points each:
[10] Name this 12-minute-long ballet. At its premiere, Vaslav Nijinsky made a number of tremendous leaps that Marie Rambert described as "near the stars."
ANSWER: The *Afternoon of a Faun* [or *L'Après-midi d'un faune*; do not accept "*Prelude to the Afternoon of a Faun*" or "*Prélude à l'après-midi d'un faune*"]
[10] This flamboyantly gay impresario gave his lover Vaslav Nijinsky the job of choreographing *Afternoon of a Faun* instead of Michel Fokine, who left this man's Ballets Russes ("ballet ROOSE") company in response.
ANSWER: Sergei **Diaghilev**
[10] Diaghilev and Nijinsky's biggest success was this controversial ballet with music by Igor Stravinsky that depicts the sacrifice of a virgin in Bronze Age Russia.
ANSWER: The *Rite of Spring* [or Le *sacre du printemps*]
<Other Art: Ballet, WA>

16. His book "The Crisis of the Naval War" provided an account of British naval involvement in World War I. For 10 points each:
[10] Name this British admiral who commanded the Grand Fleet until he was replaced by Sir David Beatty.
ANSWER: Sir John **Jellicoe**
[10] Jellicoe commanded British forces at this 1916 battle, which is named for the peninsula on which Denmark lies. This was the largest naval engagement of World War I.
ANSWER: Battle of **Jutland** [or Battle of **Skagerrak**]
[10] Jellicoe earlier served during this conflict as captain of the HMS *Centurion* and chief of staff to Edward Seymour during the Seymour Expedition. A coalition during this conflict included both Austria-Hungary and France and was commanded by Alfred Gaselee.
ANSWER: **Boxer** Rebellion [or **Tianhui** Movement]
<British/CW History, NB>

17. Answer the following about scandals related to arms trafficking in the US, for 10 points each.
[10] In 2012, a scandal emerged when it was revealed that, during "Operation Fast and Furious," the ATF had deliberately let guns fall into the hands of drug cartel leaders in this country.
ANSWER: **Mexico** [or **United Mexican States** or **Estados Unidos Mexicanos**]
[10] In October 2017, this company announced that it had made mistakes in its filings with US regulators related to arms trafficking rules. This company is headquartered near Toulouse and produces the Ariane 5 rocket.
ANSWER: **Airbus** SE
[10] This former California State Senator was arrested in 2014 for trying to buy guns from the Moro Islamic Liberation Front and sell them to an undercover FBI agent. He is currently in prison for racketeering, corruption, and illegal arms trafficking.
ANSWER: Leland **Yee**
<Other/Misc Academic, WA>

18. Because these data structures perform fewer rotations than a more balanced counterpart, they are preferred in applications involving many insertions or deletions. For 10 points each:
[10] Name these data structures that store an extra bit to ensure that the longest path from root to leaf is not longer than twice the shortest path from root to leaf.
ANSWER: **red-black** trees [prompt on self-balancing trees or binary search trees or binary trees]
[10] Red-black trees avoid the possibility of becoming unbalanced, unlike basic binary search trees. A maximally unbalanced binary search tree is one of these lists, in which each element points to the next one.
ANSWER: **linked** list [prompt on list]

[10] Three answers required. Binary trees can be searched using three different traversals: pre-, post-, and in-order. Give the order of the three lines of pseudocode for an [emphasize] *in-order* traversal in terms of the two recursive calls on the left and right children and the printing of the current node.
ANSWER: **left, current, right** [or recursive call to **left** node, print **current** node, recursive call to **right** node; accept **self** in place of "current"; accept any answer that includes the underlined words in the correct order]
<Other Science: Computer Science, AK>

19. Name these authors who have been thoroughly savaged by longtime New York Times critic Michiko Kakutani, for 10 points each.
[10] Kakutani wrote "Mickey Sabbath, You're No Portnoy" in an article calling this author's novel *Sabbath's Theater* "distasteful and disingenuous." She wrote more favorably about this author's *American Pastoral*.
ANSWER: Philip **Roth**
[10] Kakutani brutalized this author's memoir *The Discomfort Zone* as a "portrait of the artist as a young jackass." A girl nicknamed "Pip" with 130,000 dollars in student loan debt is the protagonist of this author's novel *Purity*.
ANSWER: Jonathan **Franzen**
[10] This author called Kakutani a "one-woman kamikaze" after she lambasted a 2006 novel that this author framed as an autobiography of Jesus. A nonfiction novel by this author recounts participating in a 1967 march alongside such luminaries as Dwight Macdonald and Robert Lowell.
ANSWER: Norman **Mailer** (The novels are *The Gospel According to the Son* and *Armies of the Night*.)
<Long Fiction, WA>

20. The Baggara are generally considered to be a subgroup of these people, and include most people who received land grants under the *hakura* system. For 10 points each:
[10] Name these people. Nationalists who identify as these people comprise the *janjaweed* militia groups who have terrorized the Fur people in raids since the 1980s.
ANSWER: **Arab**s [accept North African **Arab**s or Sudanese **Arab**s; prompt on Sudanese people]
[10] Arab *janjaweed* have also been active in this African country that borders Sudan's Darfur region. The Diffa Arabs live on the shores of the shrunken lake that lends its name to this country.
ANSWER: **Chad** [or Republic of **Chad**]
[10] An ancestor with this name is the namesake of an Arabic tribal group whose dialect became widely used among Sanhaja Berbers after the Char Bouba ("shar BOO-buh") War. A leader with this first name survived six coups, including one led at Skhirat ("s'khee-RAHT") by Mohamed Bedbou and the "coup of the aviators" led by Mohamed Amekrane.
ANSWER: **Hassan** [accept Beni **Hassan** or **Hassan** II]
<World History, WA>