

1. The progress of this process is measured using the modified Bishop's score, and lack of blood during this process causes necrosis of the pituitary in Sheehan's syndrome. This process is impeded by shoulder dystocia, and Group B streptococcal infection is a common side effect of it. Immediately after this process, appearance, activity, and respiration are measured on a zero to two scale in order to obtain the (\*) Apgar score. This process is eased by using a Tuohy needle to inject bupivacaine into the epidural space. During this process, dilation of the cervix and rupture of the membrane occurs. An alternative to this process is a Caesarean section. For 10 points, name this process in which a child is expelled from the uterus.

ANSWER: child**birth** [or **labor**; accept equivalents]

<Mukherjee>

2. This object's first appearance is accompanied by a character stretching his arms toward it "in a curious way" and trembling. At one point in the novel in which it appears, this object is obscured by mist, which prompts the narrator to note that a character's "count of enchanted objects had diminished by one". At the end of that novel, the narrator compares this object to "the (\*) orgastic future that year by year recedes before us", while critics often assert that this object, which is visible from West Egg, represents things like hope, money, or the unattainable love of its owner. For 10 points, identify this oft-analyzed object that tantalizes Jay Gatsby from its position on Daisy Buchanan's dock, a prominent symbol in *The Great Gatsby*.

ANSWER: the **green light** at the end of the Buchanans' dock in *The Great Gatsby*

<Carson>

3. This character uses laughter to fight the personification of burdensome life called the Spirit of Gravity. This character likens three stages of life to a camel, a lion, and a child, and his frequent use of the verb *untergehen* is translated "go under" by Walter Kaufmann. This non-Aztec is joined by an eagle and a snake that he sees overhead. This speaker of a "roundelay" says that man is a tightrope between beast and something greater, and falls unconscious while thinking that events might be cyclical due to (\*) eternal recurrence. This man descends from the mountains to preach about the "over-man," or *ubermensch*. For 10 points, name this fictionalized prophet who speaks in a namesake work of Friedrich Nietzsche.

ANSWER: **Zarathustra** [do not accept "Zoroaster"]

<Jackson>

4. Two answers required. Mitchell Sharp suggested reducing economic dependence between these two countries in 1972 through the "Third Option". One of these countries decided to cancel its Avro Arrow program after agreeing to house Bomarc Missiles from the other country. Irish nationalists from one of these countries launched attacks into the other in the (\*) Fenian raids. An 1837 rebellion triggered a conflict along the border between these countries that saw Amos Durfee killed and the ship *Caroline* set ablaze. These countries' border was partially settled through the Aroostook War, and inspired the slogan "Fifty-Four Forty or Fight". For 10 points, name these two nations that participate in NORAD and share Lake Superior.

ANSWER: Dominion of **Canada** and the **United States** of America [accept in either order; accept alternate names like **USA** or **America** for **United States** of America]

<Bentley>

5. One text named for these animals is followed by “The Family of Imran”. A murder victim in Moses’s era is struck with part of a yellow one of these animals before reviving in that 286-verse-long text, whose “Throne verse” was exalted by Muhammad. A dream featuring seven fat ones followed by seven (\*) skinny ones was interpreted as portending feast followed by famine by Joseph. The second and longest sura in the Qur’an is named for these creatures, which were struck by the fifth of the ten plagues in Egypt. The products of this *ghee*-producing animal cannot be worn on Yom Kippur, and Aaron requested the Israelite’s earrings while Moses was on Mount Sinai to make the image of one for worship. For 10 points, name these animals which are sacred to Hindus.

ANSWER: cows [or heifers; or cattle; or calf; or calves]

<Jackson>

6. This composer's violin concerto features the mysterious Spanish inscription "Herein is enshrined the soul of ...." which may refer to his love Alice Stuart-Wortley. In one of his choral works, the title character sings "*Sanctus fortis*" shortly before a priest sings "Go forth upon thy journey, Christian soul". That work by this composer was edited by his friend Augustus Jaeger and incorporates text by (\*) Cardinal Newman. A melody from his most famous work was reworked as part of the coronation ode for Edward VII, with the lyrics "Land of Hope and Glory" added. That march by this composer of *The Dream of Gerontius* is often played at American graduations. For 10 points, name this English composer of the *Pomp and Circumstance Marches*.

ANSWER: Edward Elgar

<Chonai>

7. In a study of this phenomenon, Phillip Cagan assumed the adaptive expectation hypothesis when he predicted the anticipated value of this. In a 1972 lecture, James Tobin argued that a low positive value of this quantity could benefit the economy. Robert Lucas showed how imperfect information among firms allows this to influence output in his islands model. By raising the number of necessary bank transactions, this phenomenon can incur (\*) shoe leather costs. The Fisher equation equates the nominal interest rate to the real interest rate plus the expected value of this. The anticipated value for this phenomenon is plotted on the Phillips curve, which shows the tradeoff between this and unemployment. For 10 points, name this increase in the overall price level.

ANSWER: inflation rate [accept hyperinflation rate until "1972"]

<Bailey>

8. A reform launched prior to this conflict required a *rote* of four farms to provide a *croft* for one soldier under the New Allotment System. Prussia took Southern Pomerania in this conflict, but found it eerily depopulated from the virulent Plague outbreak that coincided with it. The Great Reduction, a land grab by the losing monarch's father, led Johan Patkul to help engineer this conflict. The (\*) Ottomans briefly joined this war in the Pruth River campaign, while the Treaty of Altranstädt led Augustus the Strong to exit it and abdicate the Polish throne. It saw clashes at Gangut and Narva before ending in the Treaty of Nystad. The Battle of Poltava pitted Charles XII against Peter the Great in, for 10 points, what conflict between Russia and Sweden?

ANSWER: Great Northern War [or Second Northern War; prompt on just “Northern War”]

<Bentley>

9. One of this man's characters argues with himself in a mirror about the nature of insanity and appears in a play centering on an argument between Ponza and Signora Frola about the nature of Ponza's current wife. In another of his plays, Frida dresses as the Marchioness Matilda in preparation for a scene which results in the title character stabbing Belcredi, derailing the (\*) Count di Nolli's plan. In the final act of one of his plays, one character shoots himself with a revolver, another drowns in the fountain, and the Director laments losing a day of work rehearsing *The Rules of the Game*. For 10 points, name this Italian playwright of *Right You Are, If You Think You Are*, *Henry IV*, and *Six Characters in Search of an Author*.

ANSWER: Luigi Pirandello

<Kothari>

10. If this law holds, a Job plot can be used. This law is derived by integrating negative N times sigma over a series of thin slices. The ratio of two values computed using *this law* is used to assess the purity of a DNA sample. This law can be used to extrapolate points on a Bradford assay, assuming the sample is in the linear range. This law assumes no turbidity, that the incident flux is non-invasive, and that the medium is homogenous. In one form, this law says (\*) A is equal to the product of the extinction coefficient, path length, and concentration. This law can be written in terms of the transmittance or absorbance. For 10 points, name this law is often used in spectrophotometry to measure the concentration of a sample using monochromatic light

ANSWER: Beer-Lambert-Bouguer law

<Mukherjee>

11. George Christopher, a mayor of this city, clashed with student protesters during a HUAC meeting held in its City Hall in 1960. George Pardee implemented plans to solve a major outbreak of bubonic plague in this city. Larry Green and J.C.X. Simon were convicted in connection to a string of murders in this city named for a police radio frequency. This site of the Zebra murders also saw the (\*) White Night riots after the lenient sentencing of Dan White, who used the "Twinkie defense" for the murders of George Moscone and Harvey Milk. Its Presidio Artillery Corps tried to contain fires caused by ruptured gas lines in the wake of a destructive 1906 earthquake. For 10 points, name this city in Northern California that lies across a namesake bay from Oakland.

ANSWER: San Francisco, California

<Chonai>

12. In 2003, the holder of this office refused to testify before parliamentary commissions regarding the privatization of Orlen and the Rywingate scandal. The only person to be re-elected to this office was once a Communist secret police agent under the code name "Alek." Since 2010, this office has been held, for the first time, by a member of the Civic Platform. That holder of this office came to power after his predecessor from the Law and Justice Party was killed in a (\*) plane crash near the Russian city of Smolensk. This office was returned to leftist control in 1995 following the defeat of the Solidarity party. For 10 points, name this position currently held by Bronislaw Komorowski, which was formerly occupied by Alexander Kwasniewski and Lech Walesa.

ANSWER: President of the Republic of Poland [or Prezydent Rzeczypospolitej Polskiej]

<Weiner>

13. In relativity, this statement is equivalent to setting the covariant derivative of the Faraday tensor to zero. This statement follows from the gauge invariance of the electromagnetic field. One method of deriving this statement is to take the divergence of both sides of Ampere's law. Applying the continuity equation to the current density yields this result. Implications of this statement include Kirchhoff's junction (\*) rule, which states that the total current flowing into a junction equals the total current out, and the fact that a neutral atom emitting an electron will become positive. This concept is demonstrated by rubbing a glass rod with a piece of fur. For 10 points, identify this statement that the number of coulombs in a volume remains unchanged.

ANSWER: conservation of electric charge [or equivalent answers like charge conservation; prompt on "continuity equation" before mention]

<Eltinge>

14. One leader of these people published the autobiography *Waiting for a Visa* and agreed to abandon his campaign for a separate electorate for them in the Poona Pact; that man was often called Babasaheb, and urged this group to convert to Buddhism. Special treatment for these people, who are protected by the Atrocities Act of 1989, was protested against in the anti-reservation riots of the 1980s. A 1955 act named for this group forbade (\*) restricting anyone entry to religious temples. K. R. Narayanan became the first of these people to become president in 1997, and they were called "Children of God" by Mahatma Gandhi. For 10 points, name these people who traditionally held jobs as fishermen and sweepers, the lowest group in India's caste system.

ANSWER: Dalit People [or Scheduled Caste or Scheduled Tribe or SC/ST or Untouchables or Harijan or Panchamas or Asprushya]

<Bentley>

15. A profile portrait by this artist was once thought to depict Ludovico Ariosto, but may in fact be a self-portrait of the artist wearing the namesake blue sleeve. This artist painted a naked baby Jesus draping Mary's veil over his head, about to step out of her lap in Saint Francis' direction, in a painting that shows a man in armor bringing in a turbaned Turk. In a work completed with his teacher, one of two symbolic (\*) nudes scoops up water from a fountain. This student of Giorgione painted the *Pesaro Madonna* and *Sacred and Profane Love*, as well as a work in which a woman in white dives into a chest while a dog sleeps on the bed next to the title nude. For 10 points, name this Venetian artist of *The Venus of Urbino*.

ANSWER: Titian

<Bentley>

16. In one novel from this country, a painter named Castel kills Maria, who had previously admired his painting "Maternity". In a story from this nation, a wizard realizes that he is only a dream after he and the son he creates walk through fire. This birth nation of the author of *The Tunnel* and *On Heroes and Tombs* is also the home of the author the collection *The Book of Sand* and the story "The (\*) Circular Ruins". That author from this country wrote a short story in which Dr. Albert explains his belief that a labyrinth is the same as a book written by Ts'ui Pen before being murdered by the German spy Yu Tsun. For 10 points, name this country home to Ernesto Sabato and the author of "The Garden of Forking Paths", Jorge Luis Borges.

ANSWER: Argentina [accept the Argentine Republic or Republica Argentina]

<Kothari>

17. One player of this instrument formed a namesake sextet featuring Billy Kyle and Charlie Shavers, which specialized in "chamber jazz". Another player of this instrument was part of the original Oscar Peterson Trio alongside Herb Ellis. It was played by the composer of "Stop! Look! And Sing Songs of Revolutions!", which appears on the album *The Black Saint and the Sinner Lady*. The Blue Devils were formed by a player of this instrument, before he became part of Count Basie's (\*) rhythm section alongside Freddie Green and Jo Jones. One player of it wrote a tribute to Lester Young called "Goodbye Porkpie Hat" on an album titled *[his name] Ah Um*. For 10 points, name this string instrument played by Charlie Mingus, which is normally played upright.

ANSWER: double bass [or upright bass before mentioned]

<Lawrence>

18. The average length of the longest cycle in one of these is given by the Golomb-Dickman constant. Cayley's theorem says that every group is isomorphic to a subgroup of the group of these functions acting on G. The group of these functions is called the symmetric group. These functions are called odd or even depending on the value of the Levi-Civita symbol or on the number of (\*) transpositions they are composed of. A derangement is one of these that leaves no element in its original place. In set theory, they are defined as a bijection of a set onto itself. For a group of n objects, the number of these using all n objects is equal to n factorial. For 10 points, name these functions of a set, in which the items are rearranged with order mattering.

ANSWER: permutation [prompt on "bijection" before mention]

<Mukherjee>

19. This play is often double-billed, and shares several stage elements, with its author's radio drama *A Slight Ache*. Although one character in this play attempts to flush a toilet three times, it does not actually flush until he notes that he's run out of matches. Notes read aloud in this play include "Soup of the day. Liver and onions. Jam tart." and "Macaroni Pastitsio. Ormitha Macarounada." Two characters in this play argue over the meaning of the phrase (\*) "light the kettle," which is later implied to have been said by an offstage character through a speaking tube. For 10 points, name this play in which the hitmen Ben and Gus hang out in a basement while orders are delivered via the title conveyance, a work of Harold Pinter.

ANSWER: *The Dumb Waiter*

<Wynne>

20. This female figure ate an uncontaminated head of lettuce which caused the conception of a child. A large pillar stands near the Iygos tree where this figure was allegedly born. In Book II of the *Metamorphoses*, this figure's Roman version asks the Ocean to help tear down a constellation. This user of the Canathus well, born on Samos, stages a deceptive seduction in a golden cloud atop Mount (\*) Ida during the Trojan War, and had the epithet "bopis," meaning "cow-eyed." This goddess created a cloud to divert Ixion's attempted rape, sent a gadfly to torment the ex-human cow Io, and put the slain watchman Argus's thousand eyes on her sacred bird, the peacock. For 10 points, name this mother of Hebe, goddess of childbirth, and wife of Zeus.

ANSWER: Hera [accept Juno]

<Jackson>

21. Because this vitamin binds to the same receptors as lithocholic acid, some studies have linked high concentrations of it to lower levels of colorectal cancer. Signs of deficiency of this substance include genu valgum, rachitic rosary, and Harrison's groove. This vitamin is converted to its hormonal form through 1-alpha-hydroxylase in the kidney, which is activated by (\*) parathyroid hormone. Forms of this vitamin that come from plants are known as ergocalciferol. This vitamin is naturally formed by sterols in the skin reacting with UV-B radiation. Deficiency of this vitamin results in bones with poor calcification and is called osteomalacia in adults, or rickets in children. For 10 points, name this vitamin, often fortified in milk.

ANSWER: Vitamin **D**

<Bentley>

22. Though this composer is not Tchaikovsky, he depicted Paolo and Francesca with a melody in 7/4 time for two violins in one symphony. Eduard Hanslick dubbed this man's first piano concerto the "triangle concerto" due to its prominent use of that instrument. One of his orchestral works manipulates a recurring C-B-E motif using his "thematic transformation" technique, and is based on a Lamartine ode about the stages of life. This composer of the (\*) *Dante Symphony* invented the symphonic poem, exemplified by works like *Les Préludes*. He also composed a set of 19 piano pieces inspired by the Gypsy music of his homeland, of which the second is the most popular. For 10 points, name this virtuoso pianist and composer of the *Hungarian Rhapsodies*.

ANSWER: Franz (Ferenc) **Liszt**

<Rosenberg>

23. This country's capital was rebuilt by Sydney Olivier following a 1907 earthquake. During the Revolutionary War, a fleet under George Rodney and Samuel Hood repelled a planned French invasion of this country at the Battle of the Saintes. Edward Eyre crushed Paul Bogle's rebellion in this country that started at Morant Bay. An expedition led by William Penn the Elder brought this island under the control of (\*) Great Britain, prompting many of its slaves to flee to Maroon strongholds. This nation achieved independence under William Bustamante, and pirates like Henry Morgan often operated from its city of Port Royal. For 10 points, name this Caribbean nation whose capital is Kingston.

ANSWER: **Jamaica**

<Bentley>

24. After this character offers to "bring in the blancmange," she is told "you be the lady, and I'll be the darkey." In one scene, this character has her dress stuffed with a pair of "Gay Deceivers", while in another scene, it is revealed that she spends her days visiting penguins, having dropped out of Rubicam's Business College. The play she appears in ends with her blowing out the candles. She is diagnosed with an inferiority complex by (\*) Jim O'Connor, whose mishearing of the word "pleurosis" led to her high school nickname, "Blue Roses". Later, she gives Jim a unicorn with a broken horn from her collection. For 10 points, identify this sister of Tom and daughter of Amanda, a Tennessee Williams character who owns a glass menagerie.

ANSWER: **Laura** Wingfield [prompt on "Wingfield"]

<Thompson>

1. In these materials, a p-n junction marks the boundary between their p and n type constituents. For 10 points each:

[10] Name these materials, such as gallium arsenide, which are better than insulators at allowing electricity to pass through them.

ANSWER: **semiconductors** [do NOT accept “conductors”]

[10] Many semiconductors are actually examples of this type of solid solution, which is essentially a mixture of two elements or more. Examples include brass and bronze.

ANSWER: **alloys**

[10] The two major types of alloy composition are substitutional, in which the atoms are all relatively the same size, and this one, in which small atoms fit into the “holes” of the grid of the larger ones. Austenite is one example of these types of alloys.

ANSWER: **interstitial** alloys

<Jose>

2. This deity lent Heracles a golden cup so big that Heracles used it as a boat. For 10 points each:

[10] Name this Greek god, the child of Hyperion. He drives a four-horse chariot east to west across the sky every day.

ANSWER: **Helios** [or **Helius**; prompt “Sun”; prompt “Phoebus;” do NOT accept “Apollo”]

[10] This plucky son of Helios was allowed to drive the sun-chariot for one day, charring much of the earth and forcing Zeus to strike him down after he lost control.

ANSWER: **Phaethon** [or **Phaeton**]

[10] Via the sea nymph Perse, Helios fathered this king of Colchis, who held onto the Golden Fleece after receiving it from a boy named Phrixus.

ANSWER: **Aeetes**

<Jackson>

3. Itzhak Stern helps this man buy the textile factory from which he coordinates his plans to save over one thousand Jews. For 10 points each:

[10] Name this industrialist who is inspired to defy Nazi Commandant Amon Goeth after witnessing a pogrom in Krakow. Thomas Keneally wrote a book about this man’s “Ark”, which formed the basis for a movie about his “List”.

ANSWER: **Oskar Schindler** [accept either underlined part]

[10] Thomas Keneally's other works include a children's book about this man "and the City of Bees". This Australian outlaw is wounded in a shootout with police, despite the presence of his homemade suit of armor, in a Peter Carey novel about the "true history" of his gang.

ANSWER: Ned **Kelly** [or Edward **Kelly**]

[10] This only Nobel-winning Australian author wrote about an adopted artist named Hurtle Duffield in *The Vivisector*. Edmund Bonner funds a trip across the Outback taken by Laura Trevelyan and the title character in his novel *Voss*.

ANSWER: Patrick Victor Martindale **White**

<Kothari>

4. Alexander Cabanel's depiction of this woman shows her facing the viewer with her left hand on some twigs and lying on a broken branch. For 10 points:

[10] Name this woman, whom John Everett Millais painted floating in the water next to a red poppy representing sleep and death.

ANSWER: **Ophelia**

[10] Along with Dante Gabriel Rossetti, John Everett Millais was a member of this 19th-century British art movement, which sought a return to the intense colors and overt allegory of 15th-century painting before it was "corrupted" by a namesake artist.

ANSWER: the **Pre-Raphaelite Brotherhood** [or the **PRB**]

[10] This author of *News from Nowhere* and *A Dream of John Ball* was friends with some of the Pre-Raphaelites. He may be better known for spearheading the traditionalist Arts and Crafts movement in Britain.

ANSWER: William **Morris**

<Chonai>

5. Freud dissected the prohibition of this behavior among Australian Aborigines in *Totem and Taboo*. For 10 points each:

[10] Name this usually forbidden practice of having sexual relations with a family member.

ANSWER: **incest**

[10] The proper dynamics of family relations were also examined in this anthropologist's "On Joking Relationships". He claimed that rituals existed to increase social solidarity and is considered the developer of structural functionalism.

ANSWER: Alfred **Radcliffe-Brown**

[10] This early anthropologist analyzed marriage pairings in *Totem and Exogamy*. He also wrote *The Golden Bough*.

ANSWER: James George **Frazer**

<Spencer>

6. One section of this work titled "Of Science" requires the basses to play a contra-B and consists of a fugue whose subject contains all twelve notes of the chromatic scale. For 10 points:

[10] Name this work that opens with a C-G-C motif representing Nature in its opening movement, titled "Introduction, or Sunrise".

ANSWER: **Also Sprach Zarathustra, Op. 30** [or **Thus Spoke Zarathustra** or **Thus Spake Zarathustra**]

[10] This man composed the tone poem *Also Sprach Zarathustra*, as well as the operas *Salome* and *Der Rosenkavalier*.

ANSWER: **Richard Georg Strauss**

[10] This other tone poem by Richard Strauss is based on a poem by Alexander Ritter about the last thoughts of a dying man and his soul's journey to heaven.

ANSWER: **Death and Transfiguration, Op. 24** [or **Tod und Verklärung**]

<Chonai>



7. This party incorporated elements of Zaki al-Arsuzi's League of Nationalist Action, and competed with the fascist message of Antun Saadeh. For 10 points each:

[10] Identify this movement whose name is often translated as "renaissance." Salah Jadid is among the Alawites who have led its only remaining political regime.

ANSWER: Arab Socialist **Ba'ath** Party [or al-**Ba'ath**]

[10] The Syrian Ba'thist regime is for the moment still led by this son of Hafez, who is engaged in a bloody civil war.

ANSWER: Bashar Hafez al-**Assad**

[10] This Greek Orthodox Syrian became the ideological father of Ba'thism, preaching a pan-Arab message in works like *The Battle for One Destiny*. He lived in exile in Iraq after 1968.

ANSWER: Michel **Aflaq**

<Ray>

8. Unlike flux density, this quantity does not depend on the position of the observer. For 10 points each:

[10] Name this measure of the total power emitted by a star. It can be measured in watts.

ANSWER: **luminosity**

[10] Magnitude can be calculated as negative 2.5 times this function of the ratio of a star's flux density to a reference flux. Consequently, the reference will have a magnitude of zero.

ANSWER: common **logarithm** [or base-10 **logarithm**; or **log** 10]

[10] These graphs plot a stellar object's magnitude as a function of time. Eclipsing binary systems will show periodic dips on these.

ANSWER: **light curve**

<Butler>

9. This treaty established a dividing line 100 leagues west of the Cape Verde islands. For 10 points each:

[10] Name this treaty negotiated by Alexander VI that outlined European claims to the New World.

ANSWER: Treaty of **Tordesillas**

[10] Pedro Cabral claimed this country for Portugal by the terms of the Treaty of Tordesillas when he discovered it in 1500.

ANSWER: Federative Republic of **Brazil** [or Republica Federativa do **Brasil**]

[10] The Treaty amended this Papal bull issued in 1493 by Alexander. With *Eximiae devotionis* and *Dudum siquidem*, it comprises the Bulls of Donation.

ANSWER: **Inter caetera** [or **Among Other Works**]

<Bentley>

10. This creature appears in a poem that claims that it will eventually "rise and on the surface die". For 10 points each:

[10] Name this creature whose "ancient, dreamless, uninvaded sleep" occurs "far, far beneath the abysmal sea".

ANSWER: the **Kraken**

[10] This poet of "The Kraken" stated, "'Tis better to have loved and lost than never to have loved at all" in a requiem commemorating his friend Arthur Henry Hallam. His other poems include "The Charge of the Light Brigade".

ANSWER: Alfred, Lord **Tennyson** [or Alfred **Tennyson**, 1st Baron Tennyson]

[10] Tennyson's aforementioned "In Memoriam A.H.H." asked if this entity was "at strife" with God, describing it as "red in tooth and claw". This word titles an early Emerson essay containing the image of a transparent eyeball that can see everything.

ANSWER: **nature**

<Kothari>

11. This novel's protagonist is shot in the stomach by Harriet Bird and, many years later, pursues a romantic interest in Memo Paris, who hangs out with the bookie Gus Sands. For 10 points each:

[10] Identify this 1952 novel based in part on the legend of Perceval and the Fisher King, represented respectively by a member of the New York Knights and by the aptly-named Pop Fisher.

ANSWER: *The Natural*

[10] This Jewish-American author wrote about the baseball prodigy Roy Hobbs in *The Natural* and about the handyman Yakov Bok in *The Fixer*.

ANSWER: Bernard Malamud

[10] Though it "snaps back to hardness" when Hobbs first meets Iris Lemon, this supernatural bat eventually fails, splitting in two after Hobbs uses it to hit foul balls at the cursing dwarf Otto P. Zipp, injuring Lemon in the process.

ANSWER: Wonderboy

<Kothari>

12. A 1601 treaty named for this city stripped the regions of Bugey, Bresse and Gex from the Duke of Savoy and added them to France. For 10 points each:

[10] Identify this city, the capital of the modern day Rhone department in France. For much of the 17th and 18th century, it was the silk capital of Europe.

ANSWER: Lyons

[10] The Treaty of Lyon was signed by this French king, the first Bourbon king of France. He issued the Edict of Nantes.

ANSWER: Henri IV [or Henry III of Navarre or Henry IV or Henri Bourbon; do not accept or prompt on just "Henry III"]

[10] By the 843 Treaty of Verdun, Lyons was given to this grandson of Charlemagne. His brothers Charles the Bald and Louis the German joined against him in the Oaths of Strasbourg.

ANSWER: Lothair I [or Lothar I]

<Bentley>

13. This man's "Copy Principle," that all mental ideas come from sensory impressions, is violated by his own example of a missing shade of blue. For 10 points each:

[10] Name this Scotsman, who revised his *Treatise of Human Nature* into the shorter *Enquiry Concerning Human Understanding*.

ANSWER: David Hume

[10] Hume argued that we can never be certain of this relation between two events, despite our prior experience of "constant conjunction," and that our belief in it is mere "custom."

ANSWER: causation [or causality; or cause-and-effect]

[10] Hume's *Treatise* quipped that reason is, and ought to be, in this relation to the passions, because reason cannot motivate moral decisions.

ANSWER: the slave of the passions

<Jackson>

14. This phenomenon was observed in Young's double-slit experiment, supporting the wave theory of light. For 10 points each:

[10] Name this bending of light around an obstacle, which results in the creation of its namesake patterns of lines.

ANSWER: **diffraction**

[10] Diffraction occurs due to this principle, which states that every point on a wavefront is a source of a new wave.

ANSWER: **Huygens-Fresnel** principle [accept either underlined portion]

[10] Fraunhofer diffraction occurs when this approximation is used. It is valid when the Fresnel number is much less than 1, and in this regime, geometric optics can be applied.

ANSWER: **far field** approximation

<Nutter>

15. This man was mocked for writing the bizarre "Dear Guru" letters to Russian Nicholas Roerich. For 10 points each:

[10] Name this former Secretary of Agriculture and Secretary of Commerce who ran for president in 1948 on the Progressive Party ticket. He was also Franklin Roosevelt's second Vice President.

ANSWER: Henry Agard **Wallace**

[10] In the 1948 election, Wallace came in fourth, behind this party consisting of Southerners disenchanted with the Democratic party. Strom Thurmond was its candidate.

ANSWER: **Dixiecrats** [or **States' Rights** Democratic Party]

[10] As Vice President, Wallace argued with Jesse Jones, the extremely powerful head of this institution founded during the Hoover term to provide loans to banks and businesses.

ANSWER: **Reconstruction Finance Corporation** [or **RFC**]

<Cheyne>

16. Answer these questions about Gram-negative bacteria, for 10 points each:

[10] Gram-negative bacteria, like Gram-positive bacteria, have this polymer in their cell walls. It consists of alternating residues of linked N-acetylglucosamine and N-acetylmuramic acid.

ANSWER: **peptidoglycan** [or **murein**]

[10] This phylum of Gram-negative bacteria obtains its energy through photosynthesis and supposedly contained the precursor to modern chloroplasts according to endosymbiotic theory. It indirectly gets its name from proteins from the phycobiliprotein family.

ANSWER: **cyanobacteria** [or **blue-green** algae]

[10] Gram-negative bacteria also feature this kind of large molecule on their outer membrane comprised of the O antigen, the Core, and Lipid A. It acts as an endotoxin and elicits strong immune responses.

ANSWER: **LPS** [or **lipopolysaccharide**]

<Chonai>

17. Antoine Bourdelle did a sculpture of this man about to fire his bow. For 10 points:

[10] Name this mythical hero who leans on a club and holds some apples behind his back in a sculpture once owned by Alessandro Farnese, which shows him with a slain lion's pelt.

ANSWER: Farnese **Hercules** [or **Heracles**]

[10] This Greek sculptor of the *Apoxyomenos* created the Farnese Hercules, in addition to many lost sculptures of his patron, Alexander the Great.

ANSWER: **Lysippos** [or **Lysippos**]

[10] This other ancient artist is known for the characteristic S-shaped curve of his sculptures, including *Hermes Bearing the Infant Dionysus* and *Aphrodite of Cnidus*.

ANSWER: **Praxiteles**

<Chonai>

18. The central character of this story tries to seduce Lizavyeta to get close to the countess, who he believes will help him get rich. For 10 points each:

[10] Name this short story that ends with Hermann losing all his money in a game of faro after failing to get an ace.

ANSWER: "The **Queen of Spades**"

[10] This Russian poet of "The Queen of Spades" wrote a verse novel in which Vladimir Lensky's fiancée Tatiana dances with, and eventually falls for, Eugene Onegin.

ANSWER: Alexander Sergeyevich **Pushkin**

[10] The completion of this play so satisfied Pushkin that he exclaimed "What a Pushkin! What a son of a bitch!" The title czar is accused of having murdered the tsarevich Dmitri and is bedeviled by the monk Grigoriy Otrepyev in this play, which was adapted into a Mussorgsky opera.

ANSWER: **Boris Godunov**

<Kothari>

19. This book begins with letters to churches like Philadelphia and Sardis. For 10 points each:

[10] Name this final New Testament book best known for its prophecies of the End Times.

ANSWER: Book of **Revelation** [or **Apocalypse** of John; or **Apokalypsis**]

[10] One of these objects called Wormwood poisons a third of the earth in the book of Revelation. In symbolic form, one of these objects displays the five sacred colors of the Druze.

ANSWER: **stars**

[10] A cave on this island was the site of the vision which John wrote of in the Book of Revelation.

ANSWER: **Patmos**

<Cheyne>

20. Answer the following about flooding on the Mississippi and Missouri Rivers, for 10 points each:

[10] A 1951 flood devastated the stockyards of this city at the confluence of the Kansas and Missouri Rivers. At their height, this city's stockyards had the second most cattle after the Union Stockyards in Chicago.

ANSWER: **Kansas City** [the stockyards spanned the Kansas-Missouri border]

[10] The Great Flood of 1927 on the Mississippi spurred this movement of some 6 million African-Americans from the rural south to northern cities such as Chicago.

ANSWER: **Great Migration** [accept First **Great Migration**]

[10] The Great Flood of 1881 created Lake Manawa, a lake inside this Iowa city that lies across the Missouri from Omaha.

ANSWER: **Council Bluffs**

<Morlan>

21. This man gained acclaim for capturing the Turkish fortress of Semendria in 1437. For 10 points each:

[10] Name this *ban* of Severin who led the Long Campaign against Murad II. Despite this man's best efforts, his idiotic king Wladyslaw III was killed at the Battle of Varna.

ANSWER: Janos **Hunyadi** [or John **Hunyadi**]

[10] Hunyadi is a national hero of this country, home to the Magyars.

ANSWER: **Hungary** [prompt on "Magyarország"]

[10] Hunyadi was defeated by Murad II at the second battle of this name, fought in 1448. The first battle of this name, fought on the Field of Blackbirds, was a crushing defeat for the Serbs under Lazar.

ANSWER: Battle of **Kosovo** Polje [or Battle of **Kossovo** Polje]

<Bentley>

22. One example of these algorithms works by recursively choosing a random pivot and is known as the "quick" variety. For 10 points each:

[10] Identify these algorithms that include the Bubble and Merge variety. They produce an ordered list of elements as an output.

ANSWER: **sorting** algorithms

[10] Merge sort has a worst case runtime of  $n \log n$  in this notation system, which is sometimes named for Bachmann and Landau. Quick sort has a worst case runtime of  $n^2$  in this notation system.

ANSWER: **Big O** Notation [or **asymptotic** notation]

[10] Sorting algorithms with this property maintain the original order of equivalent items in the input list. Merge Sort has this property but Heapsort does not.

ANSWER: **stable** [or **stability**]

<Bentley>

23. This novel's title character is also known as "Tragedy", and it notoriously ends with the narrator, the novelist himself, presenting three different endings. For 10 points each:

[10] Name this John Fowles novel about the relationship between Charles Smithson and the title character, the disgraced Sarah Woodruff.

ANSWER: *The **French Lieutenant's Woman***

[10] John Fowles based aspects of Sarah Woodruff on this Thomas Hardy title character, a woman whose relationship with Angel Clare ends after the revelation that she murdered her seducer, Alec d'Urberville.

ANSWER: **Tess** Durbeyfield [or **Tess** of the D'Urbervilles; prompt on "Durbeyfield" or "D'Urberville"]

[10] Sarah Woodruff lives in this English coastal town, also the longtime home of Fowles himself. In a famous scene in Jane Austen's *Persuasion*, Louisa Musgrove falls off "Granny's Teeth", a stone staircase in this town.

ANSWER: **Lyme** Regis

<Cheyne>