



1. One of these things was awarded the Croix de Guerre with Palm after being shot and losing part of a leg in saving Charles Whittlesey's Lost Battalion; that was Cher Ami. Another one of these things nicknamed G.I. Joe was responsible for saving civilians and British troops by stopping the bombing of the Italian town Colvi Veccia. In the 1970s, the CIA attempted to covertly surveil using cameras attached to these animals. One of these named Martha died in 1914 at the age of 29 and is considered the last living one of a species of this bird. For 10 points, name these birds once employed in war as messengers because of their homing ability.

ANSWER: pigeons [or homing pigeons; or carrier pigeons; or passenger pigeons]

023-13-83-17101

2. In a work set in this location, a noblewoman discusses "Love, that releases no beloved from loving," and a king recounts how he told his men, "You were not made to live your lives as brutes, but to be followers of worth and knowledge." In a play set in this location, a woman is reminded of New Year's Day visits to a "boring old aunt" named Mary. In that play, a servant here says his uncle lives on the third floor and beyond it are "more rooms, more passages." People who enter this location include a lesbian postal clerk and an army deserter who ultimately concludes that this location "is other people." For 10 points, name this location represented as a plain room in Jean-Paul Sartre's *No Exit*, but which is actually a terrible afterlife.

ANSWER: hell [or l'enfer; or inferno; prompt on the room in No Exit before it is read]

052-13-83-17102

3. As a baby, this man was kidnapped by Telephus, who threatened to murder him if Achilles did not heal him. The Oracle at Delphi told him to go to the Crimea, where he teamed up with his half-brother Chryses to defeat King Thoas and take a statue of Artemis. This man kidnapped Menelaus' daughter Hermione along with his cousin and best of friends, Pylades. This man's mother had a dream in which she suckled a viper at her breast who turned out to be him. This man goes insane, but is acquitted of murder after Athena arranges the first murder trial on the Acropolis. For 10 points, name this prince who killed Aegisthus and Clytemnestra to avenge his father Agamemnon.

ANSWER: Orestes

080-13-83-17103

4. This poem compares its central figure to "Pisanello lacking the skill to forge Achaia," and it recalls a time when "the English Rubaiyat was still-born" and "Gladstone was still respected" in the section "Yeux Glauques." The first section of this poem concludes by predicting a time when "change hath broken down all things save Beauty alone." As related in the opening, this poem's title character was "bent resolutely on wringing lilies from the acorn" and strove for three years "to resuscitate the dead art of poetry." For 10 points, name this dense poem about a triply-named poet written by Ezra Pound.

ANSWER: "Hugh Selwyn Mauberley"

014-13-83-17104

5. The only surviving sketch of one of these places was created by visiting Dutchman Johannes de Witt. Philip Henslowe's diary records his experience in charge of one of these facilities called The Rose. A sign with a picture of Atlas inspired the name for one of these facilities; another was named because it was built on the former land of Dominican monks. These institutions, which were shut down between Oliver Cromwell's ascent and the Restoration of Charles II, included one named "Blackfriars" that was built by James Burbage. Another of these was frequented by "groundlings," who paid the lowest admission price. For 10 points, name these places in Elizabethan England, including The Globe, where Shakespeare's plays were performed.

ANSWER: theaters [or playhouses]

080-13-83-17105

6. Anne Treisman added a dictionary to Donald Broadbent's "filter model" of this concept to create her own "attenuation model" of it. This resource is required more for "top-down" than for "bottom-up" tasks. Colin Cherry's experiments on this capacity led him to identify the "cocktail party problem." Tests that measure this faculty may make use of the Stroop Effect, in which it is hindered by a bottleneck. Daniel Simons conducted a seminal experiment on this ability in which attendants of a basketball game did not report seeing a man in a gorilla suit. For 10 points, name this concept from cognitive psychology that is weakened in a namesake "deficit disorder."

ANSWER: attention

080-13-83-17106

7. A member of this order wrote the first European history of the Mongol empire after seeing the enthronement of Guyuk Khan. Another member of this order, John Capistran, led a crusade to help John Hunyadi at the Siege of Belgrade. Its general Michael of Cesena teamed up with Holy Roman Emperor Louis IV after the bull *Ad conditorem canonum* was issued by John XXII. The longstanding conflict between Zealots and Laxists within this order led the Observants to split off from the Conventuals. The author of the *Opus Majus*, Roger Bacon, belonged to this order, whose second founder was Saint Bonaventure. This order had a sister order in the Poor Clares. For 10 points, name this monastic order founded by an animal-loving saint from Assisi.

ANSWER: Franciscan monks [or Order of Friars Minor; or Spiritual Franciscans; accept Conventuals before read; accept Observants before read]

080-13-83-17107

8. Georg Philipp Telemann wrote the first known concerto for this instrument. Lionel Tertis, one of the first famous players of this instrument, was the original dedicatee of a concerto for it by William Walton. Paul Hindemith premiered that concerto and wrote his own concerto for this instrument, *Der Schwanendehrer*. This instrument represents a man who sees a "Pilgrims' March" and witnesses an "Orgy of the Brigands" in a symphony commissioned by Niccolò Paganini, but rejected for the number of rests in this instrument's part. Hector Berlioz's *Harold in Italy* was written for, for 10 points, what string instrument, which uses the alto clef and is slightly larger than a violin?

ANSWER: viola

080-13-83-17108

9. One derivative of this compound is used to protect the heart from anthracycline chemotherapeutics like doxorubicin; that compound is desrazoxane. To collect the buffy coat, either heparin or this compound is used as an anticoagulant. A mixture of Tris-HCl and this compound is a common buffer used to store nucleic acids, because of this compound's ability to inactivate some nucleases. This compound is used to treat lead poisoning when the lead level is above 45, and this complex uses four oxygen atom and two nitrogen atoms to form an octahedral structure against its target metal atom. For 10 points, name this chelating agent whose four acetic acid units attached to a diamine backbone can sequester magnesium and calcium.

ANSWER: **EDTA** [ or **Ethylenediaminetetraacetic acid** or **Ethylenediaminetetraacetate**]

048-13-83-17109

10. This artist was good friends with the wealthy Harry and Louise Havemeyer, who, on this artist's advice, assembled a painting collection now in the Met. Such paintings as *Spanish Dancer Wearing a Lace Mantilla* arose from this artist's time in Seville. One of this artist's paintings shows a little girl in makeup and a sleeping dog taking up two of four vivid blue armchairs. This artist showed a woman in a blue dress licking an envelope to seal a letter sitting on a dropleaf desk in *The Letter*, one of many aquatints she based on Japanese woodcuts. She painted a little girl dipping her feet in the water in *The Child's Bath*. For 10 points, name this woman, an Impressionist who frequently painted mothers with their children.

ANSWER: Mary **Cassatt**

080-13-83-17110

11. This poet concluded one poem with the lines, "Sleep is good, death is better--surely the best would be never to have been born." Another of his poems begins, "I don't know what it means that I am so sorrowful." This poet of "Morphine" wrote an early two-part collection titled *Travel Pictures*. His play *Almansor* contains the famous line, "Where they burn books, in the end they will also burn people." He included the cycles "Youthful Sorrows" and "The North Sea" in his seminal *Book of Songs*. For 10 points, name this German Romantic poet whose poems such as "Die Lorelei" were frequently set to music as *Lieder*.

ANSWER: Heinrich **Heine**

014-13-83-17111

12. This man created a list of what government should and should not do in his *Manual of Political Economy*. In one work, this thinker found that the major flaw in Blackstone's *Commentaries* was his "antipathy to reform." He coined the term "international law," and this author of *Fragment on Government* devised a formula he called a "moral arithmetic." He claimed that laws should be passed so as to achieve the "greatest happiness for the greatest number" in *An Introduction to the Principles of Morals and Legislation*. For 10 points, name this philosopher who was a founder of utilitarianism and theorized a model prison called the Panopticon.

ANSWER: Jeremy **Bentham**

030-13-83-17112

13. An experiment conducted by Joseph Becker and John Shive confirmed that the "sandwich" type of this device would function. A tape recorder manufacturing company begun by Akio Morita and Masaru Ibuka became famous for introducing a pocket-sized apparatus based on this device. The first type of this device to be created used a small strip of gold foil spread over one vertex of a plastic triangle and carefully cut at that vertex. That was the point-contact type of this device, which was made by John Bardeen and Walter Brattain, who worked under William Shockley at Bell Labs. For 10 points, identify this device that was used in a namesake type of radio.

ANSWER: **transistor**

066-13-83-17113

14. The narrator of one novel by this author writes poetry under the pseudonym Eliot Boliver and lives in fear of “the Hangman,” his stutter. In his most recent novel, a woman is sold to the “House of Sisters,” an abbey whose nuns are forced to bear children used in child sacrifice. That woman, Orito, is a midwife for Dr. Marinus, an employee of the Dutch East India Company living at Dejima harbor. This author of *The Thousand Autumns of Jacob de Zoet* wrote the detective story “Half-Lives,” about an investigative journalist researching the Seaboard HYDRA nuclear plant. That story is one of six nested inside each other that stretch from the nineteenth century to a post-apocalyptic Hawaii. For 10 points, name this author of *Cloud Atlas*.

ANSWER: David **Mitchell**

121-13-83-17114

15. According to the mass continuity equations for a fluid, given two points in a fluid, the product of density, fluid velocity, and this quantity at those points will be equal. Fourier's law of conduction states that the change in big Q with time is negatively proportional to the product of this quantity and the derivative of temperature with position. The Stefan-Boltzmann constant has units of power divided by the product of the fourth power of temperature and a measure of this quantity. Teslas are equivalent to one weber per this measure and is thus used to measure magnetic flux density. Kepler's second law states that orbits sweep out equal this in equal time. For 10 points, name this quantity which can be reported in square meters.

ANSWER: surface **area** [or cross-sectional **area**; or **square meters** until it is read; prompt on "surface"; prompt on "cross-section"]

001-13-83-17115

16. A proposed bronze statue of this site's dedicatee had a sword in its right hand, replacing the originally intended Bible. One statue at this site has a crown of leaves on his head that pays tribute to the della Rovere family, who helped fund this project. *The Genius of Victory* is part of this site, as is a work that Sigmund Freud proposed showed its subject overcoming the temptation of fury. Located in the San Pietro in Vincoli, this project's statues of Rachel and Leah were sculpted by Raffaello de Montelupo. Two horns adorn this work's centerpiece, a statue of Moses. For 10 points, name this incomplete monument sculpted by Michelangelo and his students, dedicated to the memory of “The Warrior Pope.”

ANSWER: **tomb of Julius II** [or **tomb of Pope Julius II**]

192-13-83-17116

17. One of this state's national parks was home to a 1972 meteor that was caught on film. This state's highest mountain is located in the Wild River range. Two parks in this state are connected by the John D. Rockefeller, Jr. Memorial Parkway. This state includes the headwaters of the Snake River, and in 1995 the federal government controversially re-introduced wolves into this state. This state is home to America's first National Monument, a massive igneous rock called Devil's Tower. For 10 points, name this state that is home to such cities as Gillette, Casper, and Cody, and most of Yellowstone National Park.

ANSWER: **Wyoming**

021-13-83-17117

18. Along with hypogonadism and sexual dysfunction, an impairment of this ability is present in patients with Kallman's syndrome. Its signals are transmitted to mitral and tufted cells after passing into non-kidney structures called glomeruli. An epithelium necessary for this sense contains brush cells that are enervated by the trigeminal nerve. The fascicles of the nerve that carries this sense move through the cribriform plate. The GPCRs responsible for this sense were cloned by Axel and Buck. This sense is carried by cranial nerve I, and an inability to use this sense is called anosmia. For 10 points, name this sense whose receptors are found in the nose.

ANSWER: **olfaction** [or **smell**; accept reasonable equivalents]

048-13-83-17118

19. A duty on the import of this good sparked an October 1905 riot in Santiago, Chile. It's not sugarcane, but Martim Afonso de Sousa introduced the production of this commodity to Brazil. Members of this industry started the War of the Farrapos, partially because of taxes on their goods. Jose Tomas Boves's Legion of Hell in Venezuela was made up of people whose livelihood mainly came from this good and who were called llaneros. In one country, people who made their living off this good used bolas in their work. The growth of this industry led to the construction of many saladeros. It's not wool, but this was the main product of Estancias. For 10 points, name these animals that were tended by gauchos.

ANSWER: **cattle** [or **cows**; or **jerky**; or **beef**; or **charque**; prompt on **meat**; prompt on **livestock**; prompt on **ranchers**]

001-13-83-17119

20. While doing public relations writing for this company, Kurt Vonnegut published his story "Report on the Barnhouse Effect." This company was asked not to sell its Alexanderson alternators to the British Marconi company by the U.S. Navy in World War I, prompting this company to found RCA. This company's chairman from 1981 to 2001 co-wrote the book *Winning* with his wife and is Jack Welch. In 2009, this company agreed to sell a majority stake in NBC Universal to Comcast. For 10 points, name this large American corporation that was created by the merger of Thomas-Houston Electric Company with a company founded by Thomas Edison.

ANSWER: **General Electric** Company [or **G.E.**]

030-13-83-17120

21. Peter Pazmany's writings defending this movement helped to develop the literary language of Hungary. The efforts of this movement were supported by Carlo Borromeo and prolific pamphleteer Francis de Sales, and Thomas Cajetan's Theatines became leading members of this movement. This movement brought about a crackdown on nudity in art. This movement resulted in the creation of the Roman Inquisition and in support for sects like the Carmelites and Jesuits. For 10 points, name this movement kicked off by the Council of Trent that was a set of internal reforms undertaken by the Catholic Church in opposition to the separatism of Martin Luther.

ANSWER: **Counter-Reformation** [or **Catholic Reformation** before "Catholic"]

080-13-83-17121

22. Weather processes in this type of region can result in a surface that consists of closely packed angular or rounded rock fragments. This type of region lends its name to a coating whose red to black color is determined by the relative abundance of manganese and iron. That surface and coating are its namesake pavement and varnish, respectively. An indicator species for one of these regions is the Joshua tree. Due to the subsidence of air that is part of the Hadley circulation, these areas are commonly found at thirty degrees latitude. These areas can form on the lee side of mountains as a result of a rain shadow. For 10 points, give this term for arid regions that receive less than about ten inches of rain per year, commonly home to cacti.

ANSWER: **deserts** [prompt on **xeric**]

066-13-83-17122

23. This poet wrote, "Wait, I prithee, till I come within earshot of thy hum--all without is martyrdom," in a poem addressing a "yellow-breeched philosopher," "The Humble-Bee." The speaker of another of his poems states, "I am the doubter and the doubt," before instructing the "meek lover of the good" to "find me, and turn thy back on heaven." This poet of "Brahma" coined the phrase "shot heard round the world" in his "Concord Hymn." For 10 points, name this American poet also known for essays such as "Experience," "The Over-Soul," and "Self-Reliance."

ANSWER: Ralph Waldo **Emerson**

014-13-83-17123



1. These things are first-class in Javascript. For 10 points each:

[10] Name these programming constructs that take in arguments and possibly return a value. In some OOP contexts, they are known as methods.

ANSWER: function [or subroutine; or procedure]

[10] This function, which is found in languages such as Python, takes in another function and an array, then applies the function to each item in the array. In one paradigm, it is combined with reduce.

ANSWER: map

[10] In languages like Java, this return type is used when a function doesn't actually return a value.

ANSWER: void

001-13-83-17201

2. This architect employed a zig-zag stepback design, consisting of what he termed "zogs," for the IDS Center in Minneapolis. For 10 points each:

[10] Identify this American architect who collaborated with Mies van der Rohe on the Seagram Building.

ANSWER: Philip Cortelyou Johnson

[10] Johnson borrowed from Mies's Farnsworth House for the design of this Connecticut building, his personal residence. Its exterior is almost entirely composed of a transparent medium.

ANSWER: Glass House [prompt on Johnson House]

[10] Robert Schuller founded a ministry named for this Johnson structure, a religious building in Garden Grove, California, that houses one of the largest pipe organs in the world.

ANSWER: Crystal Cathedral

066-13-83-17202

3. At the end of the novel in which this character appears, he dies of yellow fever on Coventry Island working a miserable job to provide for his family. For 10 points each:

[10] Name this idiotic cavalry officer who attempts to solve the problem of his mountain of gambling debts by encouraging his wife to prostitute herself to men of ill repute, like Lord Steyne.

ANSWER: Rawdon Crawley [or Rawdon Crawley; prompt on Crawley]

[10] This wife of Rawdon Crawley graduates from Miss Pinkerton's Academy for Young Ladies along with her friend Amelia Sedley.

ANSWER: Becky Sharp [or Becky Sharp]

[10] Rawdon and Becky appear in *Vanity Fair*, the best known novel of this English author.

ANSWER: William Makepeace Thackeray

020-13-83-17203

4. Nearly all the participants in the "Congress of the Victors" were killed during this program. For 10 points each:

[10] Name this program of the late 1930s that began with the Trial of the Sixteen. Sparked by the assassination of Kirov, the show trials of Kamenev and Zinoviev were part of this program.

ANSWER: **Great Purges** [or **Great Terror**]

[10] This leader of the Soviet Union ordered the Great Purge. Earlier his policies of collectivization and dekulakization led to famine in Ukraine.

ANSWER: Joseph **Stalin** [or Iosif Vissarionovich **Stalin**; or Ioseb **Dzugashvili**]

[10] Stalin appointed this man as head of the NKVD prior to the Great Purge. This successor of Yagoda claimed that a "center of centers," or a master conspiracy against the USSR, existed.

ANSWER: Nikolai Ivanovich **Yezhov**

149-13-83-17204

5. Despite the legacy of these people, Andre Gide wrote, "It is impossible to read a page of them where that good opinion they have of themselves does not burst out from between the lines." For 10 points each:

[10] Name these siblings, one of whom named Alphonse Daudet to his namesake literary academy. That academy annually awards a namesake prize to the best French prose work.

ANSWER: the **Goncourt** brothers [or Edmund and Jules de **Goncourt**]

[10] The 1919 Goncourt prize was awarded to *Within a Budding Grove*, a volume of this author's *In Search of Lost Time*.

ANSWER: Marcel **Proust**

[10] In 2003, the prize went to Jacques-Pierre Arnette for his novel about the mistress of this other author, who wrote *Drums in the Night* and *The Caucasian Chalk Circle*.

ANSWER: Bertolt **Brecht**

020-13-83-17205

6. It's 1966 and Lyndon Johnson is traveling abroad. For 10 points each:

[10] In October, Johnson is visiting this country when war protesters lay down in front of his car, and Robert Askin suggests the car "run over the bastards." This country's more recent leaders have included Kevin Rudd and Julia Gillard.

ANSWER: Commonwealth of **Australia**

[10] Johnson was particularly chummy with this Australian Prime Minister, who said "all the way with LBJ" in a July 1966 speech. He disappeared while swimming in 1967 and was never found.

ANSWER: Harold **Holt**

[10] Holt was a member of this Australian political party founded by Robert Gordon Menzies. This party opposes the Labor Party of Rudd and Gillard.

ANSWER: **Liberal** Party of Australia

052-13-83-17206

7. This man was the namesake of a commission that attempted to exonerate Leon Trotsky, and he founded the University of Chicago's Lab Schools. For 10 points each:

[10] Name this educator and philosopher who debated Walter Lippman regarding the citizen's role in democracy and who wrote *Democracy and Education*.

ANSWER: John **Dewey**

[10] John Dewey was a leading member of this school of philosophy that also included William James and Charles Sanders Peirce. This school of philosophy attempted to judge ideas by looking at their practical consequences.

ANSWER: **pragmatism** [or word forms]

[10] In works like *Human Nature and Conduct* and *Theory of Valuation*, Dewey examined the distinction between instrumental and intrinsic value. This term refers to the philosophical study of goodness or value, encompassing both ethics and aesthetics.

ANSWER: **axiology**

030-13-83-17207

8. This quantity's spectrum depends on frequency cubed, allowing it to be Lorentz invariant. For 10 points each:

[10] Name this quantity, the ground-state energy of a quantum mechanical system. It equals  $h$  times frequency over two for the quantum harmonic oscillator, and mathematically results from the uncertainty principle.

ANSWER: **zero-point** energy

[10] The zero-point energy density of the universe is analogous to this constant symbolized with a capital lambda, which Einstein called his “biggest blunder” when he included it in his field equations.

ANSWER: **cosmological** constant

[10] The ratio of pressure to energy density for an exact cosmological constant would be equal to this number, suggesting that the universe is expanding.

ANSWER: **negative one**

190-13-83-17208

9. Answer these questions about international relations theory, for 10 points each.

[10] One famous theory in IR is the idea that two countries with this form of this government will never go to war with one another, its namesake “peace theory.” Citizens in countries with this system can vote against politicians who wage unpopular war.

ANSWER: **democracy** [or **democratic** republics]

[10] In modern IR parlance, this type of world features only one hegemon or superpower with no empire and no competition. IR theorists debate whether the post-Cold War US anchors a world of this type.

ANSWER: **unipolar** world

[10] This activity studied by Kenneth Waltz is the affixing of smaller or weaker states with existing great powers. In balance-of-power theory, this activity is contrasted with balancing.

ANSWER: **bandwagoning**

104-13-83-17209



10. Hemolytic-uremic syndrome results from an inactivation of this system. For 10 points each:

[10] Name this part of the innate immune system, so-named because it helps antibodies and macrophages get rid of cells.

ANSWER: **complement** system

[10] One complement pathway is triggered by the attachment of the mannose-binding form of this protein to certain sugars.

ANSWER: **lectin**

[10] Along with opsonization, chemotaxis, and clumping, the complement system does this to targeted foreign cells. In general, this can happen to a cell affected by a non-lysogenic virus or if it just fills up with too much water.

ANSWER: **lysing** [accept **lytic** cycle]

020-13-83-17210

11. At the end of one of this author's novels, Jules pimps out a girl and commits murder during the Detroit Race Riot. For 10 points each:

[10] Name this prolific author of *them*, *A Garden of Earthly Delights*, and the short story "Where Are You Going, Where Have You Been?"

ANSWER: Joyce Carol **Oates**

[10] Oates's novel *What I Lived For* takes its title from a chapter of this Henry David Thoreau book about living in a cabin by a lake in the woods.

ANSWER: **Walden**

[10] Marianne's decision not to press charges against the upperclassman who sexually assaults her tears apart the title rural New York family of this Oates novel.

ANSWER: **We Were the Mulvaney's**

020-13-83-17211

12. This man's wife Naamah was the mother of Rehoboam, his successor. For 10 points each:

[10] Name this Biblical king with 700 wives and 300 concubines, who was conceived when his father lay with Bathsheba.

ANSWER: King **Solomon**

[10] Solomon was once asked to determine which of two women was the mother of a child. He decided that the imposter mother was the one who would allow him to take this action.

ANSWER: **splitting** the baby in half [or obvious equivalents]

[10] Bathsheba proclaimed Solomon king over this other son of David, the fourth-eldest. Joab was put to death for throwing his support behind this man, who Solomon forbade from marrying David's maidservant Abishag.

ANSWER: **Adonijah**

190-13-83-17212

13. Name the following works of propaganda painting, for 10 points each.

[10] Norman Rockwell created an image of this brawny wartime worker at a munitions factor for the *Saturday Evening Post*. Another image of her displays the words "We Can Do It!"

ANSWER: **Rosie the Riveter** [prompt on **Rosie**]

[10] Name either the original Diego Rivera mural at the Rockefeller Center that was destroyed or its replacement that was produced because Nelson Rockefeller didn't like the image of Lenin at a May Day Parade.

ANSWER: **Man at the Crossroads** [or **Man, Controller of the Universe**; or **Man in the Time Machine**; or **El hombre controlador del universo**; or **El hombre en la máquina del tiempo**]

[10] The word "KANHOM" appears in this small, abstract propaganda poster created by El Lissitzky during the Russian Civil War.

ANSWER: **Beat the Whites with the Red Wedge**

020-13-83-17213

14. This king's father ended the *kapu* system of religious prohibitions, and he dealt with an attempted annexation of his kingdom by Britain in the Paulet affair. For 10 points each:

[10] Name this Christian convert whose twenty-nine year reign, the longest in his kingdom's history, included the transition to a written constitution in 1840.

ANSWER: **Kamehameha** III of Hawai'i

[10] One man of this surname, born to white missionaries in Hawai'i under Kamehameha III, presided over the nobility's end and its annexation by America. James, a cousin of that man Sanford, bought out the islands to grow fruit for a namesake company.

ANSWER: **Dole** family [or Sanford **Dole**; or James **Dole**]

[10] This nickname was given to the coercive 1887 document that forced the Hawaiian monarchy to surrender most of its power to whites.

ANSWER: **Bayonet** constitution of 1887

104-13-83-17214

15. These mathematical objects can be classified as positive definite, negative definite, or indefinite depending on the product of a vector, it, and the vector's transpose. For 10 points each:

[10] Name this type of square matrix that is equal to its own transpose.

ANSWER: **symmetric** matrix

[10] This kind of square matrix, consisting of a function's second-order partial derivatives, is positive definite at a function's local minima and negative definite at a function's local maxima.

ANSWER: **Hessian** matrix

[10] The Hessian of a function is equal to the Jacobian of this function of  $f$ , which takes in a scalar field and returns a vector field. Applied to a function  $f$ , its dot product with a vector  $v$  gives the directional derivative of  $f$  along  $v$  and it is symbolized  $\text{del}$ .

ANSWER: **gradient**

080-13-83-17215

16. In 2001, after the composer's wife Ursula allowed permission of a recording of the original 1914 score of this symphony, many music critics found that over twenty minutes of music had been cut for the final version. For 10 points each:

[10] Name this Ralph Vaughan Williams symphony in which the harp plays Westminster chimes and other instruments evoke Bloomsbury Square and The Strand to conjure up images of the title city.

ANSWER: A London Symphony [or Ralph Vaughan William's *Symphony No. 2*]

[10] An anti-Crimean war speech and several poems by Whitman, such as "Beat! Beat! Drums!" are used in this cantata by Vaughan-Williams, which shares its name with the final movement from Bach's *Mass in B-minor*.

ANSWER: Dona nobis pacem [or Grant us Peace]

[10] Vaughan Williams also wrote a *Fantasia* on this traditional English folk song of uncertain musical authorship. Well, we do know that Henry VIII did not, in fact, write it for Anne Boleyn.

ANSWER: "Greensleeves"

020-13-83-17216

17. The highest point of this island is Mount Takpochao, and its judiciary meets at Susupe. For 10 points each:

[10] Name this island that is located in a U.S. commonwealth. The site of a fierce World War II battle, many Japanese civilians jumped to their deaths here off this island's Banzai Cliff.

ANSWER: Saipan

[10] Saipan is located in this commonwealth of the United States in the western Pacific Ocean. This commonwealth's island of Pagan was evacuated in 1981 after a volcanic eruption, and other islands in this commonwealth include Rota and Tinian.

ANSWER: Northern Mariana Islands [or Northern Marianas; do not accept or prompt on "Marianas"]

[10] This Marianas chain also includes this unincorporated U.S. territory with capital at Agana. Its native peoples are the Chamorro.

ANSWER: Guam

030-13-83-17217

18. Forged letters implicated this man in the Phoenix Park murders. For 10 points each:

[10] Name this leader of the Irish Parliamentary Party, who represented the party as an MP from 1875 to 1891. He was a vigorous supporter of the Irish Home Rule Movement.

ANSWER: Charles Stewart Parnell

[10] Parnell influenced this Prime Minister's views on Home Rule. He won one election after his Midlothian Campaign denounced the Bulgarian Horrors.

ANSWER: William Ewart Gladstone

[10] Controversy ensued when Parnell began a relationship with this woman, who was still married to her first husband, a Catholic Nationalist MP. She eventually divorced that man and married Parnell.

ANSWER: Kitty O'Shea [or Katherine O'Shea; or Katharine Page Wood]

052-13-83-17218

19. This author recounted a battle between giants rowing islands as boats in the mouth of a whale in a work sometimes considered the first science fiction novel. For 10 points each:

[10] Name this ancient writer whose *Philopseudes* contains the basis for Goethe's "The Sorcerer's Apprentice." His other works include the *Dialogues of the Gods* and the aforementioned *True History*.

ANSWER: **Lucian** of Samosata

[10] Lucian of Samosata's home was located in this modern-day country, whose own writers include Yasar Kemal and the author of *Snow*, Orhan Pamuk.

ANSWER: **Turkey**

[10] This Sufi poet, who died in present-day Turkey, may be best-known for his six-book *Masnawi*.

ANSWER: Jalāl ad-Dīn Muhammad **Rūmī**

080-13-83-17219

20. In Robert Hitchens's novel *The Green Carnation*, Reggie Hastings represents this author. For 10 points each:

[10] Name this minor British poet known for his anti-Semitism and for being the son of the Marquess of Queensbury. He translated *Salome* into English and wrote about "the love that dare not speak its name" in "Two Loves."

ANSWER: Lord Alfred **Douglas** [prompt on **Bosie**]

[10] Douglas is best-known today as the lover of this Irish playwright of *The Importance of Being Earnest*.

ANSWER: Oscar **Wilde**

[10] Wilde wrote this extremely long letter to Douglas while in jail. Titled for a passage in Psalm 130, this letter apparently never reached its addressee.

ANSWER: ***De Profundis***

190-13-83-17220

21. This phenomenon explains why all three bonds of carbonate have the same length. For 10 points each:

[10] Name this phenomenon in which electrons are delocalized over an atom, resulting in multiple Lewis structures.

ANSWER: **resonance** [or word forms; or **mesomerism**]

[10] To represent the true resonance hybrid of benzene, it is customary to draw a hexagon with this attribute, rather depicting the three double bonds.

ANSWER: a **circle** is drawn inside of it

[10] An important rule of proposing resonance structures is that you can move electrons but not atoms. If you do move atoms, it produces this class of isomers, which differ in the connectivity of atoms.

ANSWER: **constitutional** isomers [or **structural** isomers]

190-13-83-17221