

## Tossups

1. A ruler of this dynasty created the New Jolfa suburb in its capital city. A twelve-gored red hat that appeared to Haydar in a dream was worn by males of this dynasty thereafter. The Peace of Amasaya allowed citizens of this dynasty access to Najaf and Medina for pilgrimages. The White Sheep lost their capital to the founder of this dynasty, who later took Khorasan from the Uzbeks and was called (\*) Ismail I. The Afsharid Nadir Shah conquered this dynasty in 1736. This dynasty's Tahmasp I allowed slaves in its army, who helped retake Kandahar from the Mughals. The Ottomans defeated this dynasty at Chaldiran. For 10 points, name this Shi'ite Persian dynasty led by rulers like Shah Abbas I, who built its capital at Isfahan.  
ANSWER: Safavids
2. Eurytus's son Hippasus had his thigh cut during this event, after his opponent sharpened his weapons on an oak tree. During this event, a man prayed to Apollo to make his spear accurate, but another deity removed the spear's tip. Another participant in this event was killed after boasting about how he would do better than a girl. In addition to Mopsus and Ancaeus, other participants included Echion, who threw the first (\*) spear; Telamon, who tripped over a tree root; and Jason, who accidentally killed a dog. At the end of this event, a man murdered his uncles Toxeus and Plexippus, prompting Althea to burn a log tied to her son's life and then hang herself out of remorse. For 10 points, name this event in which Atalanta and Meleager killed a creature sent by Artemis to ravage the countryside.  
ANSWER: Calydonian Boar Hunt
3. An image of God the Father in a painting by this artist served as the model for the halo above Napoleon's head in Ingres's portrait. That painting by him contains a life-sized nude rendition of Eve, who carries a citrus fruit in place of the traditional apple. This artist arranged for his patron's marriage to Isabella of Portugal as the court painter to Duke Philip the Good. Several of his paintings bear signed frames with the motto (\*) "As I can," forming a pun in Greek on his own name. In a possible self-portrait of his, a man wears a red chaperon commonly mistaken for a turban. The *Just Judges* was stolen from a polyptych mostly by this artist, whose bottom center, when open, depicts the *Adoration of the Mystic Lamb*. For 10 points, name this Flemish artist who, with his brother Hubert, painted the *Ghent Altarpiece*.  
ANSWER: Jan van Eyck [or Hubert van Eyck until "his patron" is read]
4. In a scene, this character eats a ball of sugar placed beside the corpse of a small child, who had been laid beneath a giant cross in hopes of being revived. At the end of the novel this character appears in, a boy dreams of his mother reading him a story in which this character plays the part of Julius Caesar in a play. This character earlier assumes the name of a hostage who was executed by those searching for him. His death is witnessed by a character who is giving the chief of police a (\*) filling, the dentist Mr. Tench. This character, who is sheltered by Coral Fellows, is saved after Brigitta declares that he is her father. This character is betrayed by the *mestizo* to The Lieutenant who is trying to eradicate the Catholic Church. For 10 points, name this protagonist of Graham Greene's novel *The Power and the Glory*.  
ANSWER: the whiskey priest
5. In mass spec, this type of ionization energy creates a molecular ion in its lowest energy level. In meteorology, potential temperature refers to cooling in this type of process to reach a 100 kPa pressure. The square of an ideal gas's speed of sound equals the pressure over the density, all times this type of "index," which is a ratio of specific (\*) heats. This type of process forms nearly vertical tracks on a PV diagram, and in Carnot cycles, two reversible examples of this process are interspersed with isothermal processes. The change in internal energy for this kind of process equals the work done on the system. For 10 points, name this type of process in which heat does not enter or leave a system.  
ANSWER: adiabatic [or adiabatic ionization energy; or adiabatic process; or adiabatic index]

6. This government placed a tax on the number of doors and windows on a building to estimate property taxes. This government increased the powers of its own “inspectors of the hall”, leading to the deportation of Charles Pichegru and Paul Barras after a failed coup. The Coup of Floreal targeted Constitutional Circles formed by Jacobins under this government. This government’s first victory was on 13 Vendémiaire against some *chouans*. The (\*) Abbé Sieyès was the last leader of this government. The Constitution of the Year III created this government, which had a legislative body composed of the Council of Ancients and the Council of Five Hundred. For 10 points, name this French Revolutionary government that preceded the Consulate and followed the Reign of Terror.

ANSWER: the Directory

7. Geologically speaking, Kure (*rhymes with brewery*) is the oldest part of this region, dating back to about 30 million years ago. A dike of igneous rock fills an eroded cavity to create this region’s Pinnacle Peak. This region is also home to the hypersaline Lake Laysan. Its northwestern-most island lies very near the Darwin Point, where ocean water temperatures perfectly balance upward coral growth with subsidence of land. J. Tuzo Wilson proposed the process that formed this (\*) archipelago as well as the series of guyots and seamounts stretching from it to the Kuril-Kamchatka Trench in the northwestern Pacific Ocean, known as the Emperor Seamounts. The hotspot that created this island chain has slowed down. For 10 points, name this volcanic archipelago home to Mauna Loa and Mauna Kea.

ANSWER: Hawai’ian islands [or Honolulu County, Hawai’i until “archipelago” is read; or Northwestern Hawai’ian Islands until “Mauna Loa” is read]

8. This thinker defined a concept “formed by the one-sided accentuation of one or more points of view”, which he distinguished based upon their levels of abstraction. He used the term “eternal yesterday” to describe a system that derives “traditional legitimacy” from its longevity. This creator of the (\*) “ideal type”, he defines the state as that which “claims the monopoly of the legitimate use of physical force”. He stated that the endpoint of bureaucratization and rationality is an “iron cage” in the same work where he described how growth in Western society was promoted by Calvinist theology. For 10 points, name this author of *Politics as a Vocation* and *The Protestant Ethic and the Spirit of Capitalism*.

ANSWER: Max Weber

9. A photograph by this artist looks down at a biker on the street from the top of a flight of winding stairs. This artist photographed a kid confidently balancing a bottle of champagne in each arm. A hole blasted into a wall forms most of the frame of his *Children Playing in the Ruins*. He photographed Gandhi a mere hour before his assassination. This artist captured a man mid-stride on a wet street near a disused ladder in his photo *Behind the* (\*) *Gare Saint-Lazare*. Because he documented events like the Spanish and Chinese Civil Wars, he’s often considered the father of photojournalism. Armed with his 35mm Leica cameras, this person sought to capture what he called the “decisive moment.” For 10 points, name this Frenchman and pioneering candid photographer with a compound last name.

ANSWER: Henri Cartier-Bresson

10. A character in this novel declares “down with the honor of our fathers and our grandfathers and our great-grandfathers” before throwing his war medals onto a roof gutter. A mother in this novel sends money to her son, who is hiding in Amsterdam, by leaving it at The Anchor restaurant for a waiter named Groll. One character in this novel receives messages by carrier pigeon from friends in Paris and Rome. Another character in this novel is called the “purest God’s little (\*) lamb” before he begins working as a bellboy. In this novel, Nettlinger attempts to meet with a character at the Prince Heinrich Hotel. The protagonist orders the destruction of St. Anthony’s Abbey three days before World War II ends. For 10 points, name this novel where Robert Faehmel plays the title game every day, written by Heinrich Boll.

ANSWER: Billiards at Half-past Nine [or Billard um halb zehn]

11. A variant of this technique eliminates lots of preparation by passing light through a zinc selenide crystal such that it experiences total internal reflection with the sample. Ultrafast lasers facilitate the two-dimensional Fourier transform variant of this technique. NASA has a new database of data from this technique for polycyclic aromatic hydrocarbons. Solid samples can be prepared for it by being integrated with potassium bromide or ground into a (\*) mull. Molecules containing carbon–hydrogen and triple bonds produce high stretching frequencies in this technique, and carbonyls produce a characteristic strong peak at 1700 inverse centimeters. The range on its readout from 1450 and 600 inverse centimeters is called the fingerprint region. For 10 points, name this type of spectroscopy that uses light with a longer wavelength than visible light.

ANSWER: infrared spectroscopy [or IR spectroscopy; or “spectrometry” in place of “spectroscopy”]

12. In the third section of a poem by this author, he says that “We see *toh kalon* / decreed in the marketplace,” and ends that poem with a section called “Medallion”. This author asks “O GEA TERRA, what draws as thou drawest?” in a section of another poem that draws heavily from Thomas Hart Benton. A poem by this author says that the title figure’s “true (\*) Penelope was Flaubert” and that he “sought to resuscitate the dead art of poetry.” This author’s best known work includes a China section, and the first Bollingen Prize was awarded to the Pisan section of that work. For 10 points, name this political fascist who penned *Hugh Selwyn Mauberly* and the *Cantos*.

ANSWER: Ezra Pound [or Ezra Weston Loomis Pound]

13. In the 1940 election, this politician was supported by Robert Hannegan after former Governor Lloyd Stark challenged him for his seat in the primaries. This president’s positive attitude towards Israel was influenced by his former business partner, Eddie Jacobson. Congress overrode this president’s veto on legislation that established the Subversive Activities Control Board. This politician, who vetoed the (\*) McCarran Act, was known as the “Senator from Pendergast” while in Congress. A *Chicago Tribune* headline incorrectly claimed that this president was defeated by Thomas Dewey in 1948. For 10 points, name this president who authorized the use of the atomic bomb on Japan.

ANSWER: Harry S. Truman

14. One essay on this concept rejects the “blackmail” of being forced to be for or against it and warns against conflating this concept with humanism. “Guardians” supervising the majority of mankind oppose this concept in another essay about it that discusses three different men who command “Do not argue!”. This concept is said to revert to mythology in a book which claims that society is manipulated into passivity by kitsch (kitsh) produced by the (\*) “culture industry”; that book is by Max Horkheimer and Theodor Adorno. Its motto is given as *sapere aude*, or “Dare to know!”, in an essay that defines it as emergence from “self-imposed immaturity”. That essay was written by Immanuel Kant, one of its members. For 10 points, name this 18th-century European intellectual movement that emphasized reason and individualism.

ANSWER: Enlightenment [or Aufklärung; or *siecle de Lumieres*; prompt on “reason”]

15. The mistreatment of this group is the subject of several books by the New Historian Ilan Pappé. This group was to be transferred parts of Areas A, B, and C under the terms of the Wye River Memorandum. Nakba Day commemorates a “catastrophe” for this group, some of whose members declared a unilateral hudna in 2003. A government led by members of this group controls territory east of the (\*) Green Line and is based at Ramallah. Newt Gingrich controversially claimed that this group was an invented ethnicity. Mahmoud Darwish was a poet from this ethnic group, whose refugees often attempt to claim right of return. For 10 points, name this ethnic group concentrated in the West Bank and Gaza Strip.

ANSWER: Palestinians [or Filastiniyuun; or Filistinim; or Palestinian refugees; or the Palestinian Authority; prompt on generic answers, such as “Arabs”]

16. In Jainism, this concept is seen as something exclusively negative, often referred to as “dirt”, or pudgala. A different religion distinguishes between three types of this concept, explained with reference to three different styles of archery. In many traditions, the lotus flower is symbolic of this concept, as it bears seeds even as it blooms. (\*) Bhishma explains this concept in the thirteenth book of the Mahabharata, saying “If one’s action bore no fruit, then everything would be of no avail.” Many traditions link this concept with that of rebirth, as it is through it that people are affected by their past lives. For 10 points, name this force in Indian religions, through which an individual’s actions affect their future.  
ANSWER: karma
17. The angiogenesis inhibitor endostatin is derived from the breakdown of this protein. The copper-containing enzyme lysyl oxidase catalyzes the formation of aldehydes from the epsilon-amino group of lysines, allowing cross-linking of this protein. A form of this protein is defective in a disease that presents with blue sclera. Defects in it can result in Ehlers–Danlos syndrome, osteogenesis imperfecta, and (\*) Alport’s syndrome. The pro- form of this protein is assembled in the ER, and peptidases cleave propetides at the ends of that pro- form after secretion. It contains many glycine-proline-X and glycine-X-hydroxyproline motifs. Ascorbic acid is a cofactor in the synthesis of this protein, which possesses a triple-helix structure. For 10 points, name this fibrous protein that comprises most of the extracellular matrix.  
ANSWER: collagen
18. One character in this play yells “Where did you learn your trade [...]. Whoever told you that you could work with men?!” when another character tells an unhelpful lie. In this play, a character delivers a monologue about a woman bringing him a cigarette after sex, while his “balls feel like concrete.” A character in this play pretends to be an executive from American Express to prevent James (\*) Lingk from canceling a contract. A competition in which the winner receives a Cadillac and the loser is fired is announced by Mitch and Murray before the action of this play. At its conclusion, Ricky Roma demands half of Shelley “The Machine” Levene’s commissions and the best leads. For 10 points, name this play titled after two plots of land that real estate agents attempt to sell, written by David Mamet.  
ANSWER: Glengarry Glen Ross
19. During this decade, the British government rented out a factory in Speke to store dead bodies. It was during this decade that the Stormont Parliament was suspended and the Sunningdale Agreement failed. During this decade, a politician made the tone-deaf choice to refer to his swim in the Caribbean during a press conference, leading to the headline (\*) “Crisis? What Crisis?” The elimination of a free milk program during this decade earned a person the nickname “Milk Snatcher”. Great Britain was led by Edward Heath and Harold Wilson for much of this decade. James Callaghan lost power at the end of this decade, following the Winter of Discontent. For 10 points, Margaret Thatcher came to power in the UK in the final year of what decade?  
ANSWER: 1970s
20. This composer later adapted the only one of his *Fourteen Romances* that was not set to a text. Works nicknamed “The Scene in the Fair” and “The Sea and the Seagulls” are included in a collection of piano etudes by this composer. This composer dedicated his second piano concerto to Dr. Nikolai Dahl, whose therapy had rehabilitated him after the failure of his *First Symphony*. This composer of the *Etudes* (\*) *Tableaux* composed a work whose opening is meant to mimic the sounds of Charon rowing on the river Styx and was based on an Arnold Böcklin painting. He wrote a set of 24 virtuosic variations for piano and orchestra on another composer’s 24th Caprice in A-Minor. For 10 points, name this composer of the *Isle of the Dead* and *Rhapsody on a Theme of Paganini*.  
ANSWER: Sergei Rachmaninoff

## Bonuses

1. The protagonists of this play are overjoyed when the Emperor arrives at their event. For 10 points each:  
[10] Name this play in which the Old Man and the Old Woman set up a party for invisible guests to hear a speech given by the Orator.  
ANSWER: The **Chairs**  
[10] *The Chairs* is by this Romanian Absurdist playwright whose recurring character Béranger appears in *Rhinoceros*, *The Killer*, and *Exit the King*.  
ANSWER: Eugene **Ionesco**  
[10] According to Martin Esslin, Theater of the Absurd was an outgrowth of this style of theater, theorized by Antoine Artaud in *The Theater and Its Double*. It attempts to assault the audience's senses, stripping words of their meanings.  
ANSWER: **Theater of Cruelty** [or **Théâtre de la Cruauté**]
2. With Hilary Putnam, this philosopher names an indispensability thesis which suggests that we must be intellectually committed to the existence of mathematical entities, such as numbers. For 10 points each:  
[10] Name this analytic philosopher who introduced his idea of the "indeterminacy of translation" in his book *Word and Object*.  
ANSWER: W.V.O. **Quine** [or Willard Van Orman **Quine**]  
[10] Both "Two Dogmas of Empiricism" and *Word and Object* support this philosophical position that the meaning of any proposition in a language can only be understood through its relation to the entire language.  
ANSWER: semantic **holism** [or meaning **holism**; or linguistic **holism**]  
[10] Quine's book *Mathematical Logic* condensed many of the ideas of *Principia Mathematica*, which was written by Alfred North Whitehead and this English philosopher, who wrote "On Denoting".  
ANSWER: Bertrand **Russell** [or Bertrand Arthur William **Russell**]
3. During the 1950s, the Chicago Symphony Orchestra and the Cleveland and Philadelphia orchestras were led by Fritz Reiner, George Szell, and Eugene Ormandy, three conductors from this country. For 10 points each:  
[10] Name this country whose popular folk dances include the *verbunkos* and the *czardas*.  
ANSWER: **Hungary**  
[10] This Hungarian composer and piano virtuoso displayed the folk influences of his native land in pieces like his nineteen *Hungarian Rhapsodies*.  
ANSWER: Franz **Liszt**  
[10] In the *Hungarian Rhapsodies*, Liszt frequently employs *tremolo* and other effects to imitate this Gypsy instrument: a box with metal strings stretched across, which are beaten with two hammers.  
ANSWER: **cimbalom** [or hammered **dulcimer**; or **cembalo**; or **tsymbaly**; or **santouri**]
4. The portion of the electric field induced by the magnetic field is not purely solenoidal in this gauge. For 10 points each:  
[10] Name this gauge specified by the condition: divergence of the magnetic vector potential plus the quantity one over speed of light squared times partial time derivative of electric potential, equals zero.  
ANSWER: **Lorenz** gauge [or **Lorentz** gauge – yes, that's correct]  
[10] Another popular gauge is the Coulomb gauge because even if the B field varies in time, this equation will be the same as in electrostatics. It gives the Laplacian of the electric potential as equal to charge density over permittivity.  
ANSWER: **Poisson equation**  
[10] In the Coulomb gauge, the electric potential varies inversely with distance, so it can be neglected when analyzing radiation problems described by this term. Diffraction problems are often divided into "near-field" and those described by this term.  
ANSWER: **far**-field



5. According to legend, the first of these people to come to rule were Rurik and his brothers, who were invited by the Krivichi and Ves' to end a period of disorder. For 10 points each:  
[10] What name is given, by East Slavic and Greek chroniclers, to the Vikings who settled and dominated the Rus' states from the 9th to 11th centuries?  
ANSWER: Varangians [or Varyags; or Varangoi]  
[10] This city was the base of a guard corps called the Varangian Guard. Vladimir the Great married a "purple-born" princess from this city.  
ANSWER: Constantinople [or Kontantinoupolis; or Byzantium; or Istanbul]  
[10] This Ukrainian city ruled by Vladimir the Great was the base of power of the greatest of the Rus' states.  
ANSWER: Kiev [or Kyiv; or Kievan Rus']
6. The protagonist of this story is amused to find that an African-American woman is wearing the same absurd hat as his mother. For 10 points each:  
[10] Name this short story in which Julian accompanies his racist mother on the bus to the Y. It titles its author's second short-story collection.  
ANSWER: "Everything That Rises Must Converge"  
[10] "Everything That Rises Must Converge" is by this Southern Gothic author, who described a family being murdered by The Misfit in "A Good Man is Hard to Find".  
ANSWER: Flannery O'Connor [or Mary Flannery O'Connor]  
[10] In O'Connor's *The Violent Bear It Away*, Francis Tarwater struggles with his great-uncle's command to perform this action on the mentally disabled boy, Bishop. In an O'Connor story, Bevel Summers dies while trying to relive his experience of this action.  
ANSWER: baptism [or word forms]
7. The "direct" form of this compound is conjugated to glucuronate, but its "indirect" form is not. For 10 points each:  
[10] Name this compound whose blood levels can be measured with the Van den Burgh reaction. It is the breakdown product of heme and gives urine its background yellow color.  
ANSWER: bilirubin  
[10] Bilirubin is transported by this very common ABC transporter, which transports all manner of foreign compounds out of the cell in pretty much every tissue of the body. That sounds pretty cool, until you realize that cancer cells resistant to medicines express this protein pretty highly.  
ANSWER: P-glycoprotein 1 [or P-gp; or permeability glycoprotein; or multidrug resistance protein 1; or MDR1; or ABCB1; or ATP-binding cassette sub-family B member 1; or CD243; or cluster of differentiation 243]  
[10] The flippase model suggests that P-glycoprotein shifts from the inner to outer leaflet of this cell part, a phospholipid bilayer.  
ANSWER: cell membrane [or plasma membrane; or cytoplasmic membrane]

8. David d'Angers sculpted a girl laying a wreath on the tomb of a general who was slain during this war. For 10 points each:  
[10] Name this war that is the subject of a painting in which an allegorical woman kneels amidst the ruins of Missolonghi, as well as a canvas in which a turbaned soldier rears his horse at the unarmed citizens of an island.  
ANSWER: **Greek War of Independence** [or **Greek Revolution**; or **Elliki Epanastasi**; or **Greek Uprising**; or obvious equivalents mentioning **Greece**]  
[10] The previously described paintings are by this French Romantic artist, best known for displaying a bare-breasted woman waving the tricolor flag in his *Liberty Leading the People*.  
ANSWER: Eugène **Delacroix** [or Ferdinand Victor Eugène **Delacroix**]  
[10] Peter von Hess and Theodoros Vryzakis both painted scenes from the Greek war while working in this city, which served as the headquarters for the Blue Rider artists and is home to the Neue Pinakothek and Alte Pinakothek museums.  
ANSWER: **Munich**, Germany [or **Munchen**]
9. Answer the following about the study of performativity in modern anthropology and sociology, for 10 points each.  
[10] The *Trance and Dance* of this Southeast Asian island's traditional theater was studied by Margaret Mead and Reo Fortune. A Clifford Geertz essay described an illegal competition on this island as "deep play."  
ANSWER: **Bali**  
[10] This author of "On Face-Work" proposed a "dramaturgical" model of social interaction, in which identity is largely performed rather than innate, in *The Presentation of Self in Everyday Life*.  
ANSWER: Erving **Goffman**  
[10] This symbolic anthropologist worked with drama professor Richard Schechner to found the Performance Studies program at NYU. With his wife Edith, he studied "liminality" among the Ndembu people of Zambia.  
ANSWER: Victor **Turner**
10. This type of economy is based on the ordoliberalism of the Freiburg school. For 10 points each:  
[10] Give this term for the type of economy promoted and implemented by the Christian Democratic Union in 1950s Germany. It is considered a forerunner of Third Way economics.  
ANSWER: **social market** economy [or **Soziale Marktwirtschaft**]  
[10] The social market economy was implemented under this Chancellor of Germany and leader of the CDU, during whose tenure the *Wirtschaftswunder*, or German economic miracle, occurred.  
ANSWER: Konrad **Adenauer** [or Konrad Hermann Joseph **Adenauer**]  
[10] This largest region of modern Germany and home of Joseph Ratzinger has been a historic stronghold for Christian and Catholic politics, led to this day by the Christian Social Union Party.  
ANSWER: **Bavaria** [or **Bayern**]
11. Lorne Michaels reported that "the air went out the studio" during this incident, which prompted a *New York Daily News* cover with the headline "HOLY TERROR." For 10 points each:  
[10] Identify this 1992 incident in which a woman, during an *a capella* performance of Bob Marley's "War," tore a photo of John Paul II in front of a studio audience before saying "fight the real enemy."  
ANSWER: Sinead (shi NAID) **O'Connor's performance as an Saturday Night Live musical guest** [or Sinead **O'Connor on SNL**; or Sinead **O'Connor's protest of Catholic sexual abuse**; or obvious equivalents mentioning Sinead **O'Connor**]  
[10] This woman parodied O'Connor by tearing up a photograph of Joey Buttafuoco during an SNL performance of her song "Bad Girl." Other famous songs by her include "Into the Groove" and "Like a Virgin."  
ANSWER: **Madonna** [or Madonna Louise **Ciccone**]  
[10] O'Connor herself is best known for her performance of this song composed by Prince, which begins "It's been seven hours and fifteen days, since you took your love away."  
ANSWER: **"Nothing Compares to You"** [styled properly, fuck that noise]

12. Secularism was established in this modern-day country as part of the Six Arrows of one of its leaders. For 10 points each:  
[10] Name this country that contains the Hagia Sophia mosque.  
ANSWER: Turkey  
[10] This Sufi order, founded in Konya in modern-day Turkey, follows the teachings of Jalal ud-Din Rumi. Its members are famous for their practice of “whirling” to get closer God.  
ANSWER: Mevlevi order [or Mawlaw’iyya; or Mevlevilik; or Mevleviye; prompt on “(whirling) dervishes”]  
[10] Mevlevlis considering whirling a form of this type of “remembrance” by which one gets closer to God and is able to feel God’s presence.  
ANSWER: dhikr [or zhikr]
13. **Note to moderator: Do not read the alternate answers to the first part.**  
The 13th of May incident refers to clashes between these people and ethnic Chinese people, and they have come to dominate the public sector in their native country. For 10 points each:  
[10] Identify these people who were the beneficiaries of the racially-motivated policies of Tunku Abdul Rahman.  
ANSWER: Bumiputera [or Bumiputra; or sons of the soil; or sons of the land; or Malay ethnic group; prompt on “Malaysian (citizens)”]  
[10] Bumiputeras are the natives of this country. Singapore briefly united with, and then split off from, this country in the 1960s, when Singapore’s populace didn’t like the pro-Bumiputera policies.  
ANSWER: Malaysia  
[10] This man, who started his career as a clerk in the East India Company, purchased land from the Johor Sultanate in 1819 to establish the city of Singapore. This friend of Humphrey Davy cofounded the London Zoo.  
ANSWER: Sir Stamford Raffles
14. Name some things from mathematics that are key if you ever take an advanced course in communications systems. For 10 points each:  
[10] To represent a set of M signal waveforms in a signal space of dimension N less than or equal to M, you would use the Gram-Schmidt process to generate a basis of unit vectors that have this property. Normal and perpendicular are synonymous with it.  
ANSWER: they’re all orthogonal [or word forms, such as orthogonality]  
[10] For this type of random process, the expected value and autocorrelation do not depend on the choice of origin for time. Thus, its autocorrelation depends only on the difference in time and not the times themselves.  
ANSWER: wide-sense stationary random process [or WSS random process; prompt on “(strict) stationary”]  
[10] Once you’ve shown that a process is wide-sense stationary, you can use the Wiener-Khinchin theorem to get the power spectral density, which is in the frequency domain, by applying this operation to the autocorrelation function, which is in the time domain.  
ANSWER: Fourier transform
15. The title character of this work sits weaving and declares “I am half sick of shadows”. For 10 points each:  
[10] Name this poem whose title character dies from a curse when she breaks her gaze from her mirror to glance out a window at Sir Lancelot.  
ANSWER: “The Lady of Shalott”  
[10] “The Lady of Shalott” is by this Victorian poet, who described tears rising “from the depth of some divine despair” in “Tears, Idle Tears”.  
ANSWER: Alfred, Lord Tennyson  
[10] Each stanza of Tennyson’s “Tears, Idle Tears” concludes with this six-word phrase. It is preceded by the phrases “So sad, so fresh” and “O Death in Life”, among others.  
ANSWER: “the days that are no more” [do NOT accept other answers]



16. The linear relationship between enantiomeric excess and the amount of this phenomenon breaks down in the Horeau effect, which is seen in succinic acid. For 10 points each:  
[10] Identify this phenomenon that does not occur in racemic mixtures because they have equal amounts of enantiomers of a chiral compound. Molecules which experience this phenomenon are denoted plus or minus.  
ANSWER: **optical** activity [or **optical** rotation; or **rotation of plane-polarized light**; prompt on “rotation”]  
[10] Enantiomers are an example of these sets of compounds that have the same chemical formula but different three-dimensional structures.  
ANSWER: **isomers**  
[10] The optical activity of protein alpha helices and DNA's double helix leaves distinct signatures in this form of spectroscopy, which has as its basis the differential absorption of left and right light polarized in the namesake direction.  
ANSWER: **circular dichroism** spectroscopy [or **CD** spectroscopy]
17. This author used Attar's *The Conference of the Birds* as a structural inspiration for his first novel, *Grimus*. For 10 points each:  
[10] Name this British-Indian author of *Midnight's Children*, who had a fatwa issued against him by Ayatollah Khomeini over the heretical content of his *The Satanic Verses*.  
ANSWER: Salman **Rushdie** [or Ahmed Salman **Rushdie**]  
[10] Rushdie described his life during the fatwa, including his marriage to Padma Lakshmi, in this memoir, which was released in 2012.  
ANSWER: **Joseph Anton: A Memoir**  
[10] This English author of the novel *G.* condemned Rushdie for not discontinuing publication of *The Satanic Verses*. He collaborated with Mike Dibb on the book and TV series *Ways of Seeing*, which analyzed art ideology.  
ANSWER: John **Berger**
18. In this aria, the singer describes her beloved's eyes opening and shining brighter as he rises from the dead. For 10 points each:  
[10] Name this aria that ends with the soprano dying to join her lover, who was stabbed by Melot. It concludes the 1859 opera in which it appears.  
ANSWER: Isolde's **Liebestod** [or “**love-death**”; or **Mild und leise** wie er lächelt; prompt on descriptive answers, such as “Isolde's final aria” or the “last aria of *Tristan und Isolde*”]  
[10] The “Liebestod” concludes this German composer's *Tristan und Isolde*. He adapted the *Nibelungenlied* into his *Ring Cycle* of operas.  
ANSWER: Richard **Wagner** [or Wilhelm Richard **Wagner**]  
[10] The title character of this Wagner opera is commanded to take a pilgrimage to ask the Pope's forgiveness, after his frenzied song to Venus shocks the knights of Wartburg and his beloved Elisabeth.  
ANSWER: **Tannhäuser** und der Sängerkrieg auf Wartburg
19. This man gave the first Day of Affirmation Speech while visiting the University of Cape Town. For 10 points each:  
[10] Name this politician who memorably gave an impromptu speech in Indianapolis after hearing of the murder of another man. This politician quoted Aeschylus and said “what we need in the United States is not violence or lawlessness, but love and wisdom.”  
ANSWER: **RFK** [or **Robert Francis Kennedy**]  
[10] Kennedy was reacting to the death of this civil rights leader, who gave the “I Have a Dream” speech in 1963.  
ANSWER: **MLK** [or Martin Luther **King** Jr.]  
[10] Robert Kennedy himself was assassinated in the Ambassador Hotel in this state, where he had just won the 1968 Democratic primary before his death.  
ANSWER: **California**

20. Vasishta is the most prominent of a group of seven of these sages associated with the seven stars of the Big Dipper. For 10 points each:

[10] Give the name for these sages, four of whom, the Kumaras, cursed two of Vishnu's gatekeepers to be reborn as the demons Hiranyaksha and Hiranyakashipu.

ANSWER: rishis

[10] This third avatar of Vishnu took the form of a boar and defeated Hiranyaksha to rescue Bhudevi.

ANSWER: Varaha

[10] Bhudevi represents this thing in Hinduism. In many Asian cosmologies, this thing is supported on the back of a turtle, which is in turn supported by four elephants.

ANSWER: the Earth [or obvious equivalents]