

**Tossups:**

1. This organ's fundic and cardiac regions contain foveolar cells which secrete mucus, while intrinsic factor, which is necessary for vitamin B<sub>12</sub> absorption, is released by its parietal cells. Blood supplied through the left and right gastro-omental arteries allows its enteroendocrine cells to produce somatostatin, cholecystokinin, and gastrin and its chief cells to secrete rennin and pepsinogen. Its rugae folds increase surface area, thus allowing for improved digestion in the region between its pyloric and esophageal sphincters. FTP, name this hydrochloric acid-producing organ which digests food into chyme.

ANSWER: stomach

2. This website was founded by Andrew Ternovski, and celebrities said to visit it include Ashton Kutcher, Paris Hilton, and the Jonas Brothers. Ben Folds streamed part of a concert in Charlotte, NC over this website, and a user known only as Merton performs piano improvisations for his partners on this site. Commentators have noted its similarity to sites like Omegle.com while both praising and criticizing the closeness between partners it offers. FTP, name this website that randomly pairs users with others in a videochat, named after a game in which players put a single round in a revolver, hold the gun next to their head, and pull the trigger.

ANSWER: www.Chatroulette.com

3. Rosso Fiorentino brought this movement to Fontainebleu, France, where he helped to found a French equivalent of this artistic style. The Salt Cellar of Francis I is a sculptural example of this style, as is Perseus with the Head of Medusa by Benvenuto Cellini. Another painting representing this style depicts the Burial of the Count of Orgaz, while a painting by Bronzino, Venus, Cupid, Folly, and Time is a key painting in this artistic style. Some of Michaelangelo's late works can be said to be in this style. This style was perhaps most concentrated in Venice, where the painters of works like Sacred and Profane Love and the Finding of the Body of St. Mark worked. FTP, identify this style perhaps best exemplified by Painters like Titian, Tintoretto, and Parmigianino, which followed the Renaissance and features exaggerated human forms.

ANSWER: Mannerism

4. It was first discovered in 1797 by a French pharmacist who produced the oxide of this element by mixing crocoites with hydrochloric acid, and he was later able to retrieve the metallic element by heating its oxide. Its +3 oxidation state is the most common, and can be obtained by dissolving its elemental form in hydrochloric acid or sulfuric acid, though it also comes in +4, +5, and +6 varieties. Trace amounts of this element replace aluminum in corundum to form rubies, and it is mixed with iron to form stainless steel alloys. FTP, what is this transition metal with atomic number 24 which is known for the bright colors of its compounds and complexes?

Answer: chromium

5. A Sub-Sub Librarian and a Late Consumptive Usher supply an Etymology and a series of Extracts which preface this work. One character in it declares that a ship was his "Yale College" and his "Harvard." Another character in this work discovers he can no longer enjoy a pipe and casts it overboard. While other characters in this novel include the harpooners Daggoo, Tashtego, and the cannibal, Queequeg, and the first mate, Starbuck. FTP, name this novel, which begins "Call Me Ishmael," and was written by Herman Melville.

ANSWER: Moby-Dick

6. He wrote a part-song in which men and women sing in the keys of G and A-flat, respectively. That piece sets the "choric song" from Tennyson's "The Lotos-Eaters" and is called "There is Sweet Music." "The Swimmer" and "Where Corals Lie" appear in an orchestral song cycle of his, and the Angel of the Agony appears in an oratorio with text by Cardinal Newman. In addition to *Sea Pictures* and *The Dream of Gerontius*, he wrote a piece famously recorded by Jacqueline du Pré, his cello concerto in E minor. Another piece contains sections called "C.A.E." and "Ysobel," as well as one inspired by Beethoven's Pathétique Sonata, "Nimrod." For 10 points, identify this composer who depicted his friends in his *Enigma Variations* and wrote *Pomp and Circumstance*.

ANSWER: Edward Elgar

7. One notable volume in this collection of treatises offers advice on how best to prevent “tyranny of the majority,” thereby ensuring that “factions” cannot harm the best interests of society or force their views on dissenting citizens. Written under the pseudonym of Publius, in homage to the Roman consul Publius Valerius Publicola, other articles argue for the creation of a strong chief executive at the helm of government as well as for the exclusion of a Bill of Rights from any potential framework of government. For ten points, name this collection of documents written by John Jay, James Madison, and Alexander Hamilton to persuade residents of New York to ratify the United States Constitution.

ANSWER: **Federalist** Papers (accept The Federalist)

8. One character in this play, ignores his servant’s reports of his wife’s bad fever and headache to inquire about the health of another guest of his house, only to respond “poor fellow” no matter how positive the news. Later, that character forbids his daughter Marianne from marrying Valère and disinherits his son Damis for accusations against the title character, and continues to refuse to believe the title character’s treachery until he witnesses him attempt to seduce his wife, Elmire. FTP, Orgon’s family is plagued by the titular religious hypocrite in what play by Molière?

ANSWER: **Tartuffe**

9. One part of this conflict was Able Archer 83, which was believed to conceal a first strike. Joseph Mobutu and Patrice Lumumba became combatants in this conflict, and when Mobutu won he was granted parachuting lessons at Fort Bragg. Quemoy, Matsu, Khe Sanh, Inchon, Prague, and Berlin became hotspots in this conflict. FTP, name this conflict, which cooled during détente and ended with the dissolution of the Soviet Union.

ANSWER: The **Cold War**

10. This property can be used to create circuits that filter out a particular frequency from a complex signal. Its namesake reactance is given by two pi times the signal frequency times this, and it is positive because the phase of the voltage leads the phase of the current. For a single loop of wire, this is given by phi over I, where phi is the magnetic flux through the loop and i is the current. FTP, name this property, commonly measured in henries, whereby a changing current induces an electromotive force that opposes the change in the current.

ANSWER: **inductance**

11. He decried a scientific approach to history in his *On the Uses and Disadvantages of History for Life*, an essay included in his early volume, *Untimely Meditations*. He was strongly influenced by the theories of Heraclitus, but blamed Socrates for the decline of Athenian drama in *The Birth of Tragedy*. His theory of eternal recurrence posited that the universe went through cycles of existence, a view praised in *The Gay Science* and *Ecce Homo*. More famous were his claim that Christianity warped classical definitions of good and bad and his call for a “transvaluation of all values”, which were included in *On the Genealogy of Morality*. This 19<sup>th</sup> century German thinker’s *Beyond Good and Evil* elaborates on his most famous ideas of the Will to Power and the Übermensch. For ten points, name this philosopher who wrote that “God is dead” in *Thus Spoke Zarathustra*.

ANSWER: Friedrich **Nietzsche**

12. A Harvard University varsity football player, this politician later earned some preliminary geopolitical experience when he traveled to Palestine firsthand in order to analyze tensions between Israeli settlers in the region and Palestinian Arabs. Upon returning to the US, and after talking tough with such influential figures as Jimmy Hoffa and Joseph McCarthy, he became one of the then-president’s closest advisers and a leader in the fight against organized crime and the mafia. Appointed Attorney General during the president’s tenure and winning a Massachusetts Senate race after the president died, for ten points, name this icon of modern American liberalism, a Democratic candidate for the 1968 presidential election, the target of assassin Sirhan Sirhan, and the younger brother of John Fitzgerald.

ANSWER: **Robert Francis Kennedy** (accept **RFK**)

13. This man grew up as an orphan in the house of his uncle and married Khadija, a widow who owned a caravan. Eight additional wives survived him, including his favorite wife A'isha. After this man's death, A'isha contested the claim of one of his sons, Ali, to become caliph. FTP, name this man, who is said to have received revelations from the angel Gabriel, and who in 622 traveled to Medina from Mecca.

ANSWER: **Muhammad**

14. The Morley-Vine-Matthews hypothesis predicted that this phenomenon would result in symmetric patterns in rocks at certain locations, providing the first strong support for this notion. These patterns record the reversals of the earth's magnetic field. First proposed by Harry Hess, it describes a process that can occur at a triple junction or a divergent boundary. FTP, identify this now widely-accepted theory that helps explain continental drift, a process in which new oceanic crust is formed at mid-ocean ridges.

ANSWER: **seafloor spreading**

15. Short stories by this author include one in which a nightingale impales itself on a rose to make it red and one in which the titular statue asks a swallow to dismantle him and spread his pieces those in need, both collected in *The Happy Prince and Other Tales*. This author's time in prison produced two notable works: a letter to his lover Lord Alfred Douglas, titled *De Profundis*, and a poem containing the immortal line "each man kills the thing he loves", "*The Ballad of Reading Gaol*". His most popular play sees Jack Worthing and Algernon Moncrieff both claim to have the titular first name in order to woo Gwendolyn and Cecily. FTP, this is what Irish author of *An Ideal Husband* and *The Importance of Being Earnest*?

ANSWER: Oscar **Wilde**

16. Many Sufis consider themselves to be above this concept. It determines whether food is halal or haram, and requires ablution after impure acts. There are four main madh'abs, or schools of thought concerning this concept, which is interpreted by ulama and applied by qadi. An opinion made by ulama pertaining to this concept is called a fatwa, and it is taught in certain madrasas along with general Islamic knowledge. Although an important source of it is ijihad, or logical reasoning, the most important sources are hadith, or records of the deeds of the prophet, and the text of the Quran. For ten points, name this system of Islamic law which pertains to all aspects of Muslim life.

ANSWER: **Sharia** (prompt on **Islamic law**)

17. This author reported about an The Everyman's Opera troupe's attempt to stage Gershwin's *Porgy and Bess* in the U.S.S.R. in his *The Muses Are Heard* and wrote about Joel Harrison Knox, who is sent to live with his grotesque relatives at Skully's Landing, in *Other Voices, Other Rooms*. He was the basis for Dill in a novel written by his longtime friend Harper Lee, *To Kill a Mockingbird*. His two popular works are a true crime story about the Clutter family murder in Kansas and a novella about society girl Holly Golightly. FTP, this is what American author of *In Cold Blood* and *Breakfast at Tiffany's*.

ANSWER: Truman **Capote**

18. This state is estimated to have been continually populated for nearly three thousand years, and the first European settlers were the Dutch and the Swedes. Its present Governor is Republican but both its Senators are Democrats, and one of them is the only Senator to have returned to the Senate after retirement. The main airport in this state is the second-largest hub for Continental Airlines, and its largest city is home to the Prudential Center. The fifth-smallest state in the US, Elizabeth and Edison are amongst the bigger cities in this state. FTP, name this north-eastern state, adjacent to New York City, that is home to Newark Airport and the Nets.

ANSWER: **New Jersey**

19. The Judy algorithm can be used to define a very fast version of these data structures by combining them with features of a hash, and a Vlist combines them with linked lists. Indexing in these structures occurs in big omega of 1 time and have zero wasted space, while resizable ones are referred to as dynamic. Slicing is a method for removing a part of these data structures and putting them into a smaller one, and these structures can be declared by declaring a series of dimensions after the name of a variable. Usually used with for loops and to implement tables, for 10 points, identify these matrix-like data structures, a group of variables with the same name but different indices.

ANSWER: **array**

20. The protagonist of this novel has a breakdown at his eighteenth wedding anniversary because a barbershop quartet brings back painful associations. Minor characters in this novel include Ronald Weary, whose death will be avenged by Paul Lazzarro. The protagonist has an amorous relationship with Montana Wildhack in a zoo on the planet of the Tralfamadorians, and enjoys the novels of Kilgore Trout. The protagonist and his soldier-comrades are in the titular German camp during the firebombing of Dresden. Death is always accompanied by the phrase “so it goes” in, FTP, what novel in which Billy Pilgrim becomes “unstuck in time” by Kurt Vonnegut?

ANSWER: **Slaughterhouse Five**

21. This man became a Knight of the Order of the Garter in 1929, though this title was revoked in 1942 and restored in 1971. He was nearly assassinated by the hand grenade of Lee Bong-Chang, an independence activist, in 1932, and survived two military coups. The second of these took place after he assented to the Potsdam Declaration. FTP, name this man, a Japanese emperor who was forced to admit that he was not a living god after WWII.

ANSWER: **Hirohito** or Emperor **Showa**

### Bonuses:

1. FTPE, answer these questions about XXL's "Freshman Class of Rap."

[10] This Canadian rapper starred as Jimmy Brooks on Degrassi: the Next Generation, but is now signed to Lil' Wayne's Young Money label. He hit the charts this year with songs like "Forever" and "Best I Ever Had."

ANSWER: **Drake**

[10] This rapper, who also goes by Bobby Ray, drew comparisons to Andre 3000 with his song "Nothin' on You" which featured Bruno Mars, since both are from Atlanta and employ a characteristic drawl

ANSWER: **B.o.B**

[10] The only white member of the Freshman Class rose to mainstream prominence with his smash hit "I Love College" followed up by "Lark On My Go-Kart"

ANSWER: Asher **Roth**

2. Some of his students who broke with him included Carl Jung and Alfred Adler, FTPE.

[10] Identify this Austrian psychologist who is famous for his sexual stages of development, including an oral and phallic stage.

ANSWER: Sigmund **Freud**

[10] In this work, Freud lays out the importance of a certain unconscious state that we experience when asleep and how to tell what those states mean

ANSWER: the **Interpretation of Dreams**

[10] Freud was a notable proponent of this drug, using it for his entire life, a powerful stimulant which also has anesthetic properties and is notably illegal.

ANSWER: **Cocaine**

3. European control of Africa quickly fragmented after World War II, FTPE:

[10] This country, formerly ruled by the British, was the first sub-saharan African nation to gain its independence in 1957. It was formerly known as the Gold Coast and Kwame Nkrumah was a leader of the Pan-Africanism and non-aligned movements

ANSWER: **Ghana**

[10] This is the capital of Ghana

ANSWER: **Accra**

[10] This state, formerly known as Rhodesia, formerly led by Ian Smith, declared its independence in 1965, but changed its name after 1980. It recently suffered a cholera epidemic under the rule of Robert Mugabe

ANSWER: **Zimbabwe**

4. FTPE, name some famous Vikings.

[10] Under this turn-of-the-millennium prince of Novgorod and Kiev, known as "the Wise," Kievan Rus

achieved its zenith.

ANSWER: **Yaroslav** I the Wise

[10] This Norwegian king ruled between his victory at the 1016 Battle of Nesjar and his death at the 1030 Battle of Stiklestad. He finished converting Norway to Christianity and became its patron saint.

ANSWER: St. **Olaf** II Haraldson (at least one of those three identifiers--canonization status, regnal number, or patronym--is necessary and may be prompted for)..

[10] This son of Swein Forkbeard expanded his father's North Sea empire as king of England and Denmark. He was one of only two English kings to be called "the Great."

ANSWER: **Knut** (or **Canute**) I of England or II of Denmark the Great Sweinson (again, need at least one of these identifiers)

5. FTPE, answer these related questions about a certain type of cellular division.

[10] This is the process through which haploid gametes are formed. Each final resulting daughter cell contains only half the number of chromosomes as the mother cell.

ANSWER: **meiosis**

[10] These "discard" entities are produced as a primary oocyte matures through meiosis. Three of them are produced alongside the ovum, which functions as the egg cell in sexual reproduction.

ANSWER: **polar bodies**

[10] If an organism loses the ability to form gametes through meiosis, it can still reproduce via this form of asexual reproduction. While advantageous if mates are scarce, this process does result in less genetic variability.

ANSWER: **parthenogenesis**

6. After returning from a tupperware party, the protagonist discovers she has been appointed executor of a will that leads her to investigate the secret Tristero Organization, FTPE:

[10] This is what novel, whose protagonist is Oedipa Maas?

ANSWER: *The **Crying of Lot 49***

[10] This author of the *The Crying of Lot 49* and *V* is famed for his anonymity, as well as his sometimes incomprehensible plots, fantastic characters, and attention to pop culture in his writing

ANSWER: Thomas **Pynchon**

[10] This other Thomas Pynchon work chronicles Lt. Slothrop's adventures across Europe in an attempt to uncover the secrets behind the German V-2 Rockets.

ANSWER: ***Gravity's Rainbow***

7. The protagonist rejects the playwright Michaelis's marriage proposal in this novel, and she has an affair with the gamekeeper of Wragby Hall. For 10 points each:

[10] Identify this novel centering on Oliver Mellors and Connie, notorious in its day for its sexual explicitness.

ANSWER: ***Lady Chatterley's Lover***

[10] *Lady Chatterley's Lover* was written by this British author, who also wrote the short stories "The Odour of Chrysanthemums" and "The Rocking Horse Winner."

ANSWER: D(avid) H(erbert) **Lawrence**

[10] Clara Dawes and Miriam are two romantic interests of the protagonist of this Lawrence novel, Paul Morel.

ANSWER: ***Sons and Lovers***

8. I have a pair of dice. FTPE:

[10] What is the probability that I roll two sixes?

ANSWER: **1/36**

[10] What is the probability that I roll two of the same number?

ANSWER: **1/6**

[10] I give one dice to my friend, and we take turns rolling until we roll the same number, with me going first. On average, how many rolls will this take?

ANSWER: **12** (1/6 probability of matching on any pair of rolls)

9. He is known for his aphorisms "God is in the Details" and "Less is More." FTPE:

[10] Identify this pioneer of the International style of architecture, famous for designing the Barcelona Pavilion, The Farnsworth House, and for co-designing the Seagram building.

ANSWER: Mies van der Rohe

[10] From 1930-33 Mies van der Rohe served as the last director of this German school that popularized modern architecture and that was founded by Walter Gropius

ANSWER: the Bauhaus

[10] This American architect designed the Seagram building with Mies van der Rohe.

ANSWER: Philip Johnson

10. Characters in this work include the three Rheinmaidens, from whom Alberich steals the title treasure of the first part. For 10 points each:

[10] Identify this series of four operas, chronicling the exploits of Wotan, Brünnhilde, and Siegfried, who slays the dragon Fafner in the third opera.

ANSWER: *The Ring of the Nibelung* (or *Der Ring des Nibelungen* or the Ring Cycle)

[10] This German composer known for his use of leitmotifs wrote the libretto and music for the Ring cycle.

ANSWER: Richard Wagner

[10] Wagner's only comic opera is this story of Hans Sachs and the young Walther von Stolzing, who attempts to become a member of the title guild in order to win the hand of Eva.

ANSWER: *Die Meistersinger von Nürnberg* (or *The Mastersingers of Nuremberg*)

11. FTPE, answer some questions about intermolecular interactions.

[10] This set of forces describes the attractive or repulsive interactions between non-ionic molecules.

ANSWER: van der Waals forces

[10] Van der Waals forces involve electrostatic interactions between molecules, which are possible because these entities are present. They can be permanent, but many of them are induced by other ones that are present.

ANSWER: dipoles

[10] This subset of the van der Waals forces refers to interactions that arise due to transient and temporary dipoles that form in the interacting molecules.

ANSWER: London dispersion forces

12. This conflict is sometimes known as the first truly world-wide conflict. FTPE:

[10] It saw victories for Prussia at the battle of Kunersdorf, which would have lost the war if not for the fortunate death of Elizabeth I of Russia.

ANSWER: the Seven Years' War

[10] The Seven years war went by this name in North America, which saw Braddock and Washington lose the battle of Fort Necessity

ANSWER: French and Indian War

[10] This treaty ended the Seven Years war, and was signed in the same place as a ton of other treaties.

ANSWER: Treaty of Paris

13. Rome's transition from a republic to empire was a turbulent one. Answer some questions about that transition FTPE:

[10] The first signs of the republic's disintegration were the social wars between these two men, one of whom put down Jugurtha in the Numidian war and reformed the Roman army, and another who dispatched Mithriades of Pontus before returning and proclaiming himself dictator of Rome for a short time. Name either of these men for ten points.

ANSWER: Marius or Sulla

[10] The disintegration of the Republic was nearly complete when Julius Caesar defeated Pompey at this battle which was later chronicled by Lucan in a namesake poem

ANSWER: Pharsalus

[10] This other member of the First Triumvirate, along with Caesar and Pompey, was said to be one of the wealthiest men who ever lived. He died at the battle of Carrhae while campaigning in Syria against the Parthians

ANSWER: Crassus

14. FTPE, name these concepts related to energy.

[10] In gases, this type of energy is proportional to temperature. For objects, it is given by one half  $m v$  squared.

ANSWER: kinetic energy

[10] This is the dot product of force with displacement.

ANSWER: work

[10] This is given by the dot product of force with velocity. In circuits, this is given by voltage times current.

ANSWER: power

15. The play opens with The Valet leading one of the three protagonists into the room where he will spend eternity, FTPE:

[10] This is what play in which Joseph, Ines, and Estelle are trapped together and decide that “Hell is other people”?

ANSWER: No Exit or Huis Clos

[10] *No Exit* is by this French Existentialist who adapted the Oresteia myth for his *The Flies*.

ANSWER: Jean-Paul Sartre

[10] Antoine Bouville suffers from the titular “sweetish sickness” while living in Bouville in this Sartre novel.

ANSWER: Nausea

16. Name these prominent Scholastic philosophers for ten points each:

[10] The most famous Scholastic was this Dominican priest whose *Summa Theologiae* synthesized Christian theology with Aristotelian logic.

ANSWER: St. Thomas Aquinas

[10] This English Franciscan friar wrote the *Summa Logicae*, but is more famous for a namesake rule of parsimony, which claims that the simplest explanation of a phenomenon is often the best.

ANSWER: William of Ockham

[10] This French scholar was known for his tract on biblical contradictions entitled *Sic et Non*, but was more famous for his castration following a failed love affair with the nun Heloise.

ANSWER: Peter Abelard

17. The protagonist of this play refuses to believe Tiresias, who says that he is the cause of the plague in Thebes, FTPE:

[10] This is what play that ends with title character putting out his eyes with Jocasta’s dress pins, after she commits suicide.

ANSWER: Oedipus Rex or Oedipus Tyrannos

[10] *Oedipus Rex* is the first play in the Oedipus Cycle of this Athenian dramatist.

ANSWER: Sophocles

[10] This final play of the Oedipus trilogy concerns the titular daughter of Oedipus’ attempts to give her brother, Polyneices, a proper burial against the wishes of Creon.

ANSWER: Antigone

18. Answer the following questions about a sect of Buddhism, for ten points each:

[10] This sect of Buddhism, whose branches include Rinzaï and Soto, has its roots in the Flower Sermon, and seeks to shock its adherents into enlightenment. It is heavily influenced by Daoism, and is most popular in China and Japan.

ANSWER: Zen or Chan Buddhism

[10] Zen Buddhism is concerned with analyzing these paradoxical statements, collections of which include the *Blue Cliff Record* and *The Gateless Gate*. An example of these is the question, “What is the sound of one hand clapping?”

ANSWER: koans

[10] Zen Buddhism is itself a part of this branch of Buddhism, the “Greater Vehicle” to salvation. It is contrasted with Theravada and Vajrayana Buddhism.

ANSWER: Mahayana

19. Identify the following masterworks of English poetry for ten points each if you can recognize it from the first line, and for five points if you need the name of the poet:

[10] “The sea is calm tonight / The tide is full, the moon lies fair / Upon the straits;”

[5] Matthew Arnold

ANSWER: **“Dover Beach”**

[10] “Thou still unravish’d bride of quietness, / Thou foster-child of Silence and slow Time”

[5] John Keats

ANSWER: **“Ode on a Grecian Urn”**

[10] “Had we but world enough, and time, / This coyness, lady, were no crime”

[5] Andrew Marvell

ANSWER: **“To His Coy Mistress”**

20. Name these amendments that were part of the original Bill of Rights, FTPE:

[10] This amendment guarantees due process of law and ensures that no one should have to testify against one’s self. It also stipulates that one can’t be tried twice for the same crime.

ANSWER: **5<sup>th</sup> Amendment**

[10] This amendment protects against search and seizure without “probable cause,” and requires that search warrants be firmly supported by an unbiased judiciary.

ANSWER: **4<sup>th</sup> Amendment**

[10] This amendment prohibits “cruel and unusual punishment,” as well as the imposition of “excessive bail” and “excessive fines.”

ANSWER: **8<sup>th</sup> Amendment**

21. Answer these questions about the most important star in your life, FTPE:

[10] The Maunder minimum of these in the 17<sup>th</sup> century is thought to have caused a period of cooling known as the Little Ice Age.

Answer: **sunspots**

[10] These create the heliosphere, a vast bubble that surrounds the solar system. This phenomenon is also responsible for the aurorae and the plasma tails of comets pointing away from the Sun.

Answer: **solar wind**

[10] This method of fusion is favored in small stars, such as our Sun. The Sun and other small stars use this cycle to convert hydrogen to helium, while the primary alternative for more massive stars is the CNO cycle.

Answer: **proton-proton** cycle

*we are the people with buzzers who answer questions*