

Tossups

1. A poem of this man's is the basis of Canadian engineering schools' "Iron Ring" graduation ceremony. "Puck of Pook's Hill" tells stories of England, but collections like "Barrack Room Ballads" and "The Phantom Rickshaw" discuss his native land. Novels include *The Light That Failed*, which incorporated themes of the British Empire, an institution this author critiqued in "Recessional" but supported in "The White Man's Burden." FTP, name this author of "The Man Who Would be King," "If-," "Gunga Din," and *The Jungle Book*.

Answer: Rudyard **Kipling**

2. A morning engagement here between Hooker's and Jackson's forces north of Dunker Church saw thousands of casualties at West Woods and the Cornfield. In the afternoon, Burnside's attack on Longstreet's men was delayed by a costly and time-consuming assault on a bridge. Between these two engagements was almost four hours of fighting for a sunken road, later given the name "Bloody Lane." Resulting in Lee's retreat across the Potomac, FTP, name this Civil War battle in Maryland in which Union forces under McClellan triumphed, and which saw the most Americans killed in a single day in U.S. history.

Answer: Battle of **Antietam** or **Sharpsburg**

3. One of their secondary functions is to help repair damage to the cell membrane by sealing off wounds. The membrane surrounding them keeps their contents, at a pH of 4.8, from destroying the surrounding cell. Their primary function is used in phagocytosis, endocytosis, and autophagy. FTP, what are these cellular organelles, whose job it is to digest other organelles and foreign particles?

Answer: **lysosomes**

4. Initially trained by the centaur Cheiron, his skills soon surpassed those of his instructor. He eventually had nine children with his wife Epione, including daughters Hygieia and Panacea. However, Zeus killed him with a thunderbolt after learning that a mortal man had discovered how to return the dead to life. FTP, name this mythological doctor, whose symbol was a serpent entwined about a staff.

Answer: **Asclepius**

5. This Duke of Swabia received his nickname from the Italians, who also formed the Lombard League in opposition to his attacks and defeated him at Legnano. Despite his reconciliation with Pope Alexander III in 1177 with the Treaty of Venice, these defeats foiled his attempts to seize power over Italy, but he succeeded in bringing the Kingdom of Sicily into the hands of his Hohenstaufen family. Dying while crossing a river en route to the Holy Land in the Third Crusade, FTP, name this Holy Roman Emperor whose nickname derived from his red beard.

Answer: Holy Roman Emperor **Frederick I** [or **Frederick Barbarossa**]

6. The first part of this work discusses 12 a priori categories linked to a posteriori appearance through schemata. It claims that metaphysics cannot extend itself beyond sensual experience. Consisting of two sections called Transcendental Doctrines, it founded transcendental idealism in defining the reality beyond physical phenomena, the noumenon or "thing in itself." FTP, identify this work, followed by similar works discussing Judgment and the Practical form of its subject, the magnum opus of Immanuel Kant.

Answer: **Critique of Pure Reason** or **Kritik der reinen Vernunft**

7. It was based largely on the R-22 Spearhead and its name may be a pun on the nickname of the earlier Aurek fighter. Officially designated the RZ-1, its main weapons were able to be pivoted up or down sixty degrees. Its most famous pilot was Arvel Crynyd, and the impetus for its design came from Jan Dodonna's analysis of the Battle of Yavin. FTP, identify this fastest rebel star fighter, one of which crashed into the bridge of Executor, named for the first letter of the Latin alphabet.

Answer: **A-wing**

8. According to Emile Zola's appraisal of this painting, its artist "asked himself why he should lie. Why not tell the truth?" Its model was an artist in her own right, Victorine Maurent, and Paul Cezanne later created a "Modern" version of it. A black cat and black lace around the subject's neck, as well as the orchid behind her ear, had sensual connotations to contemporaries. FTP, name this work of Édouard Manet depicting a black maid and a French prostitute.

Answer: **Olympia**

9. This book provided the band Steely Dan with their name. Telling a story of drug addiction and treatment and interspersed with stories like "The Blue Movies," much of it takes place in Interzone, modeled on the author's residence at the time of publication in Tangier. It introduced characters appearing in many of the author's later works, such as Dr. Benway and the main character Bill Lee. FTP, identify this work graphically satirizing 1950's American culture, a novel of the Beat Generation by William S. Burroughs.

Answer: The **Naked Lunch**

10. This author of *The Splendour of the Truth* and *Crossing the Threshold of Hope* survived a 1981 assassination attempt by Mehmet Agca [AH-ja]. Elected at the age of 58, his reign was the second longest ever, and he traveled more than any of his predecessors. The first non-Italian Pope in over 400 years, he was a former Archbishop of Krakow before being elected to the Holy See in 1978. FTP, name this beloved Pope who died of Parkinson's disease in 2005.

Answer: **John Paul II**

11. "When I feel my dreadful anguish, my heart cries out for vengeance" is a part of the aria "Mi Tradi," which was not part of the premiere performance of this work, but was added on the behest of the actor who played Elvira. The duet "La ci darem la mano" sung by the title figure and Zerlina has the title figure seduce another woman in addition to Donna Anna, and Leporello sings the famous "Catalogue" aria. FTP name this Mozart opera that ends with the title womanizer being dragged down to Hell.

Answer: **Don Giovanni**

12. Pencil and paper ready, 15 seconds. FTP, calculate the determinant for the following 3 by 3 matrix. First row values: 5, 3, 1. Second row values: 6, 7, 0. Third row values: 8, 9, 0.

Answer: **negative 2**

13. Clarence Darrow quit his job and decided to represent labor forces after this event, which was eventually halted after Attorney General Richard Olney obtained an injunction. In order to stop the interference with U.S. Mail, Grover Cleveland brought in federal troops under Nelson Miles to suppress this event, which resulted in the arrest of Eugene Debs. FTP, name this 1894 event in which a group of workers went on strike, resulting in a stoppage of work on the railway system between Chicago and the Pacific Coast.

Answer: **Pullman** Strike

14. Drawing from Boisguilbert, they wanted the government to stay out of the grain market, and they continued Vauban's work in studying tax codes and wealth with statistical methods. They thought wealth was produced by the Productive agricultural workers and flowed to the Proprietary landlords, with the "Sterile" merchants only exporting surplus food. However, their conservative conclusions were arrived at through an entirely new focus on free trade, coining the term "laissez-faire". FTP, name these French proto-economists of the 18th century led by Turgot and Francois Quesnay [Ke-NAY].

Answer: **Physiocrats** or **Physiocracy**

15. At first working with Rutherford, in 1912 he studied X-ray diffraction under Lawrence Bragg and pioneered X-ray spectroscopy techniques. He is remembered for providing empirical foundation for both the Bohr atomic model and the order of the periodic table with his eponymous law, finding that the strongest wavelength of an element's x-ray spectrum is proportional to the square of its atomic number. FTP, name this English scientist, killed at Gallipoli, who discovered the experimental basis of atomic number.

Answer: Henry Gwyn Jeffreys **Moseley**

16. The mother of the narrator of this work is killed by a lightning bolt during a picnic. The mother of the title character is killed by a car while attempting to mail three letters. The title character dies during childbirth in Alaska, and the narrator dies of coronary thrombosis while in prison for killing Clare Quilty. That narrator, Humbert Humbert, had earlier fallen in love with a young girl whose real name is Dolores Haze. FTP, name this work about the title nymphet by Vladimir Nabokov.

Answer: **Lolita**

17. This ancient empire's eponymous capital city still exists in the Tigray region below the Adwa Mountains. Its port Adulis was part of trade networks with Greece and India by the 1st century CE. Their kings, the "nigusa negast," traced their descent to King Solomon through the Queen of Sheba. King Ezana is remembered for invading Nubia and making Orthodox Christianity this empire's official religion in the fourth century CE. FTP, name this African Christian empire which dominated the Red Sea from its center in northern Ethiopia.

Answer: **Axumite** Empire or **Aksum**; accept **Abyssinia**, prompt on "Ethiopia" until mentioned in question

18. This quantity, unlike another famous Legendre transform of the internal energy of a closed system, requires constant pressure. It is calculated by subtracting the product of entropy and temperature from enthalpy, and this thermodynamic potential is the maximum amount of work available in a system. FTP, name this quantity, the change of which across a reaction must be less than zero for it to be spontaneous, more useful than a related quantity named after Helmholtz.

Answer: **Gibbs** free **energy**

19. Some of his early stories include "Makar Chudra" and "Chelkash", and he was briefly jailed for his poem "Song of the Stormy Petrel". He describes bakery workers who bet on whether a man can seduce a girl in "Twenty-six men and a girl". The first part of his autobiographical trilogy is entitled *My Childhood*, while in one his more famous works Pelageya Nilovna joins her son's revolutionary group. In yet another famous work, Satin and Luka live in hideous lodging. FTP identify this Russian author of *Children of the Sun*, *Mother*, and *The Lower Depths*.

Answer: Maksim **Gorky** (or Aleksey Maksimovich **Peshkov**)

20. One can navigate it via the 140 mile Grand Loop, and points of interest include Tower Falls, Obsidian Cliff, and Inspiration Point. It is also home to numerous mud volcanoes, the Washburn and Gallatin mountain ranges, and Eagle Peak. Popularized by William Henry Jackson's photographs and Thomas Moran's paintings, examples of its most famous feature include Riverside, Porkchop, and Steamboat. FTP, name this first U.S. national park, located mostly in Wyoming and home to the geyser Old Faithful.

Answer: **Yellowstone** National Park

21. In the 1890's its City Hall was the tallest building in the world. After decades of labor disputes like the Bay View Massacre, "Sewer Socialism" characterized city government as mayors Seidel, Hoan, and Zeidler focused on sanitation as well as more traditional concerns of their party. Besides the Socialist Party, this city is associated with the Progressive Party, especially the longtime governor of its state, Robert La Follette. FTP name this city on Lake Superior, the largest in Wisconsin.

Answer: **Milwaukee**

Bonuses

1. Answer the following about a chemical pathway, FTPE.

This cycle occurs after glycolysis and produces two GTP and six NADH molecules, as well as four CO₂ molecules. Its namesake molecule is formed in the first step.

Answer: **citric acid** cycle or **Krebs** cycle

This thioester is converted from pyruvate and joins with oxaloacetate to form citric acid, making it an important link between glycolysis and the citric acid cycle.

Answer: **Acetyl-CoA** or **Acetyl-coenzyme A**

Identify either the energy-carrying molecule important in the citric acid cycle which accepts two electrons or its precursor molecule. This system, in parallel with the transformation of NAD to NADH, mediates the transfer of the energy produced by the citric acid cycle to the production of ATP.

Answer: **FAD⁺**, **FADH₂** (note that the ⁺ is *not* a necessary part of the answer, while the ₂ is), aka **Flavin adenine dinucleotide**, or **1,5-dihydro-FAD**

2. Answer these questions about Triple Alliances in world history FTSNOP.

A Triple Alliance of Texcoco, Tlacopan, and another city formed, FTP, the Empire of this people from 1428 to their defeat by the Spanish in 1521.

Answer: **Aztecs** or **Aztec Empire**

The War of the Triple Alliance was named after an alliance between three South American nations. Name two of the three Alliance members F5PE.

Answer: **Brazil**, **Uruguay**, and/or **Argentina** (they fought against Paraguay)

The 1882 Triple Alliance, part of the system of interlocking alliances that led to World War I, contained Italy and, F5PE, these two nations.

Answer: **Germany** or **German Empire** and **Austria-Hungary** or **Austro-Hungarian Empire** (do not accept Austria or Hungary or Austrian Empire)

3. Answer these questions about the works of Richard Wright, FTPE.

This autobiography tells the story of the author's life from his rural childhood to his escaping the South on a train ride to Chicago. *American Hunger*, which continues the story, was published posthumously.

Answer: **Black Boy**

This novel depicts a poor African-American in Chicago who murders two people, and explains the social and racial inequities that created this "brute Negro."

Answer: **Native Son**

Name the protagonist of *Native Son*, whose name is a reference to a Harriet Beecher Stowe character.

Answer: **Bigger Thomas** (accept either name)

4. Identify the following countries that recently changed their flags FTPE.

This African nation abandoned its red-yellow-green tricolor with a black R for one with blue, yellow, and green horizontal stripes and a sun in the corner.

Answer: **Rwanda**

This Caucasian republic, with capital at Tbilisi, changed to a red cross on a white background with a red cross also in each corner

Answer: **Georgia**

This Baltic country, with capital at Tallinn, debated a motion to change its flag to a Nordic cross variety like neighboring Finland.

Answer: **Estonia**

5. Answer these questions about an electrical element FTPE.

a. Represented in a circuit diagram by two parallel lines, these devices are used to store charge.

Answer: **capacitors**

b. A capacitor's capacitance is measured in this SI unit.

Answer: **Farad**

c. For a given material, this is the ratio of the capacitance of a capacitor with the material between the plates to the capacitance of the same capacitor but with vacuum between the plates.

Answer: **Dielectric** Constant

6. FTPE, answer these questions about an American poet.

a. This poem, inspired by the Graveyard poets, tells the reader to "list to nature's teachings ... approach thy grave" and "lies down to pleasant dreams."

Answer: **Thanatopsis**

b. Thanatopsis, along with such other works as "The Prairies" and "The Poet," were written by this American poet.

Answer: William Cullen **Bryant**

c. This other Bryant poem describes the movement of the particular creature as "Thou'rt gone, the abyss of heaven hath swallowed up thy form."

Answer: **To a Waterfowl**

7. Identify these works of Auguste Rodin FTPE.

a. This statue depicts a man, sitting down apparently in deep contemplation.

Answer: The **Thinker** or Le **Penseur**

b. This work in the form of a door depicts scenes from *The Divine Comedy* by Dante.

Answer: The **Gates of Hell** or **La Porte de l'Enfer**

c. This life sized male nude sculpture, which depicts a man with one hand on his head, was shown at the Paris Salon in 1877 and was criticized for being too close to life.

Answer: The **Age of Bronze** or **L'age d'airain**

8. Identify terms related to a religion, FTPE.

a. Tirthankaras are the 24 leaders of this ascetic faith who have achieved enlightenment and whose teachings form this religion, from the Sanskrit for "to conquer."

Answer: **Jainism**

b. The most recent tirthankara, he lived within a century or two of the Buddha, and aside from legends of Parshvanatha, his predecessor, he is the first historically verified leader of Jainism in its modern form.

Answer: **Mahavira** or **Vardhamana**

c. Meaning "non-violence," it is the fundamental principle of Jainism and is extended to all forms of life. Many Jains are vegetarians in light of this, and some even cover their mouths to avoid inhaling insects.

Answer: **Ahimsa**

9. Answer the following about an author and his works FTPE.

a. This modern Mexican author is known for works like *Where the Air is Clear* and *A Change of Skin*, and recently wrote a work called *Inez*.

Answer: Carlos **Fuentes**

b. Set in the last few hours of the title figure, this Fuentes novel depicts the life of a wealthy man who lived through the revolution and lost his idealism.

Answer: *The **Death of Artemio Cruz*** (or ***La Muerte de Artemio Cruz***)

c. Spanning over 2,000 years of history and myth, this novel attempts to trace various elements of Hispanic culture by going back to such events and Phillip II and his building of the Escorial.

Answer: **Terra Nostra**

10. The Bait Shop was a super-hip music venue on Fox's *The O.C.*. From the clues, FTPE, give the names of these real bands that performed there.

a. This band was formed in Las Vegas in 2002. Their frontman, Brandon Flowers, has gained a lot of attention for making disparaging remarks against The Bravery and Green Day. Songs include "Mr. Brightside" and "When you were Young."

Answer: **The Killers**

b. This band performed on the show while promoting their album, *Good News for People Who Love Bad News*. This year they released their new album, *We Were Dead Before the Ship Even Sank*.

Answer: **Modest Mouse**

c. Ryan, Seth, and Marissa got to see this band when Crazy Oliver gave them tickets. The band, named after a character from *Ferris Bueller's Day Off*, spent over two years attempting to record their second album, which was released in July and features the song "When Did Your Heart go Missing."

Answer: **Rooney**

11. Answer these questions about events in the 11th century CE FTPE.

a. This empire started the century under Basil II, who expanded into Syria and defeated the Bulgars. However, it saw its Anatolian holdings fall to the Turks after the Battle of Manzikert in 1071.

Answer: **Byzantine** Empire. (accept **Byzantium**)

b. Toward the end of the century, Pope Gregory VII insisted on papal control over this, the appointment of church officials. The ensuing controversy would pit Holy Roman Emperors against Popes seeking worldly power.

Answer: **Investiture**

c. Gregory VII notably feuded over investiture with this Holy Roman emperor, who was excommunicated but later did penance at Canossa to get back in.

Answer: **Henry IV**

12. FTPE, answer the following about the history of Florida.

This Spaniard discovered and named Florida while searching for the Fountain of Youth.

Answer: Juan **Ponce de León**

This Spanish settlement in Florida is the oldest surviving European settlement in North America.

Answer: **Saint Augustine** or **San Agustín**

Signed in 1819, this treaty gave Florida to the United States from Spain.

Answer: **Adams-Onís** Treaty

13. Answer these questions about a matter of procedural law and its use in American history FTPE.

a. Name this practice, the rendering by the jury of a not guilty verdict in protest or disagreement with the judge's instructions or with the justice of the law in question itself.

Answer: **Jury nullification**

b. A famous 1733 colonial case against this New York City printer for libel against the royal Governor ended with the jury acquitting him on the grounds that his libel was based on fact, contrary to the wishes of the judge.

Answer: John Peter **Zenger**

c. While this term for a jury whose members cannot agree on whether to convict or acquit does not necessarily imply a protest against the law, a sharp increase in its incidence in recent decades is often explained as a modern form of jury protest against the validity of drug laws, racism in the law, and other issues.

Answer: **Hung jury**

14. Identify the following twentieth century composers FTPE.

Upon returning home in 1936, he completed "Peter and the Wolf". Other works include *The Love for Three Oranges* and the ballet *Romeo and Juliet*.

Answer: Sergei **Prokofiev**

Whenever you need music to set the mood of a supernatural, powerful bad guy, you can always fall back to playing excerpts from his *Carmina Burana*.

Answer: Carl **Orff**

This Connecticut native is probably best known for his *Concord Sonata* and *Three Places in New England*.

Answer: Charles **Ives**

15. Identify these writers from a similar part of the world from works FTPE.

a. *A Bend in the River*, *A House for Mr. Biswas*

Answer: Vidiadhar Surajprasad **Naipaul**

b. *In a Green Night*, *Omeros*

Answer: Derek **Walcott**

c. Derek Walcott moved in 1953 to this island and established a theater workshop here, and it is also where Naipaul was born.

Answer: **Trinidad**

16. Prominent examples of them include pRB, p16, and BRCA. FTPE:

A. Name this class of genes that, opposed to oncogenes, act to maintain normal functioning of cells and prevent them from becoming cancerous.

Answer: **tumor suppressor** genes

B. The most prominent tumor suppressor is probably this "guardian of the genome" that is activated by cellular stress and can, among other functions, activate DNA repair and stall the cell cycle. It is mutated in over half of human cancers.

Answer: (T)**p53**

C. Another important function of p53 is activating this process of type 1 programmed cell death if the cell can't be repaired.

Answer: **apoptosis**

17. Answer these questions about recent developments in the quest to create a Constitution for the European Union FTSNOP.

a. In 2005, two countries rejected the Treaty establishing a Constitution for Europe in public referendums. FTPE, name these countries, whose rejection of the Treaty necessitated the drafting of a new one.

Answer: France and The Netherlands [accept Holland]

b. A proposed replacement was drafted on October 19 in a European capital city. FTP, name that city.

Answer: Lisbon

18. Name these doctors of the Roman Catholic Church FTPE

One of the original four Latin doctors was this translator of the Vulgate, who spent a great deal of time as a hermit in Palestine.

Answer: St. Jerome

This Spanish Carmelite monk and doctor of the church wrote the *Dark Night of the Soul*.

Answer: St. John of the Cross or San Juan de la Cruz

This first major scholastic theologian is also a doctor of the Church. He served as Archbishop of Canterbury and wrote the *Proslogion*, in which he outlined his ontological proof of the existence of God.

Answer: St. Anselm of Canterbury

19. Identify these nitrogen-containing functional groups given their molecular formula FTPE.

a. NH_2 , NH , or N for its primary, secondary, and tertiary types, respectively.

Answer: Amines

b. N_3

Answer: Azide

c. CN

Answer: Nitrile

20. Identify these men, some of the first to circumnavigate the globe, FTPE.

a. Ferdinand Magellan did not survive his entire voyage, but this Basque seafarer led one ship, the *Victoria*, with just seventeen sailors to complete the trip to Spain after Magellan died in the Philippines.

Answer: Juan Sebastián Elcano

b. This seafarer was responsible for the first non-Spanish circumnavigation, discovering his eponymous Passage between Cape Horn and Antarctica on the way, from 1577 to 1580.

Answer: Francis Drake

c. This man's 1768 to 1771 expedition in the *Endeavour* was the first circumnavigation to sustain no casualties from scurvy.

Answer: James Cook