

1. This theory explains why the flux of muons in the atmosphere was much higher than its regular decay period should allow. The Lorentz transformations utilized under this theory arise as an attempt to explain away the results of the Michelson-Morley experiment. FTP identify this theory that postulates that all physical laws are the same in all inertial reference frames and that the velocity of light in empty space is uniform for all observers and universally constant, first published in 1905 by Albert Einstein.

Answer: **Special Relativity** (prompt on **Relativity**)

2. Ottawa. Jonesboro. Galesburg. Quincy. Alton Freeport. Charleston. All of these towns in Illinois are the locations of the acts that took place in 1858, just a few weeks before the senatorial election. They gave the election to the incumbent senator after he argued that the state itself can decide whether or not it excluded slavery. FTP, name the acts that took place in all of these places and are now named for the senatorial candidates who spoke at each of them.

Answer: The **Lincoln-Douglas** debates [prompt on early buzz with “Illinois”]

3. The form is originally French and did not appear in English until the later 1800’s. It is 19 lines long, but only uses two rhymes, while also repeating two lines throughout the poem. The first five stanzas are triplets, and the last stanza is a quatrain. For ten points, identify this variety of poem, whose best-known example may be “Do Not Gentle into That Good Night” by Dylan Thomas.

Answer: **Villanelle**

4. The key demographics for this product are 6 to 17 year olds. Early on, the TV family on "My Three Sons" promoted this product. Composed of corn syrup, partially hydrogenated oils, dextrose, gelatin and xanthan gum, their average shelf life is 6 to 9 months. FTP, identify this Kellogg's product that comes in frosted and unfrosted varieties.

Answer: **Pop Tarts**

5. Shakyamuni is applied to this term when concerning the historical character. Maitreya refers to the teaching incarnation of this figure, and is sometimes given Messianic characteristics. His disciples are known as arhats, and his doctrine may be found in the Tripitaka, and many sutras. For ten points, identify this religious figure born Siddartha Gautama.

Answer: **Buddha**

6. This law based on a set of assumptions only applicable to gasses at high temperature and/or low pressure,, it uses the constant R to relate the parameters of its equation. FTP, name this law relating pressure, volume, temperature and the number of atoms.

Answer: **Ideal Gas Law**

7. The main character after “passing the time, as they say, very pleasantly” gets down to business, calling on local landowners. He will be taxed on the objects of his unusual purchased, but will be able to count them as property, helping him gain the reputation of a gentleman owner. For ten points, identify this work in which Pavel Ivanovich Chichikov purchases the title objects from Russian peasants, a work by Nikolai Gogol.

Answer: **Dead Souls**

8. When Matthew Perry opened up Japan’s ports to Western colonial fleets, it helped to expose the weakness of the Tokugawa shoguns and unleash nationalistic unrest from the masses. Even though shogun Tokugawa Yoshinobu agreed to the principle of the event in question, Satsuma radicals seized Kyoto anyway on January 3, 1868. FTP, name this event in Japanese history that re-established imperial rule and helped begin Japan on the road to a nation-state.

Answer: **Meiji Restoration**

9. While he repeatedly refuted any existential treatments of his work, like his *Introduction to Metaphysics*, this pupil of Edmund Husserl is considered to be an existentialist and strongly influenced Jean-Paul Sartre. His instruction under Husserl is evident as he developed existential phenomenology. FTP, identify this German philosopher most famous for writing *Being and Time*.

Answer: **Martin Heidegger**

10. The highest point in this state is Black Mountain, for now -- coal companies want to perform mountaintop removal on the peak. Other than coal, limestone also makes an appearance in the state's geology, a mineral frequently eroded by water. This erosion leads to many caves, especially around the state's Green River, whose subterranean tributaries, the River Styx and Echo River no longer allow boat tours in order to preserve the habitat of endemic blind shrimp, *Palaemonias ganteri*. These shrimp are found in Mammoth Cave, a famous geologic feature of, FTP, which state?

Answer: **Kentucky**

11. They were first discovered because Japanese farmers recognized that some rice plants were abnormally elongated early in the season. They are a class of plant hormones that stimulate growth in the stem and leaves, trigger the germination of the seed and cause the breaking of bud dormancy. FTP, identify these hormones, which with auxin, stimulate fruit development.

Answer: **Gibberellins**

12. With its independence in 1990, it became the first country in the world to incorporate environmental protection into its constitution. A German colony in the 1880's, it was occupied by South Africa during World War I and administered as a mandate before being annexed in 1946. The South-West Africa People's Organization launched a war of independence in 1966 and in 1988 South Africa granted it independence under a United Nations mandate. FTP, name this south African nation with capital at Windhoek.

Answer: **Namibia**

13. Flunking out of architectural school because he refused to design anything other than plain, ugly buildings, he nevertheless opened an architectural office. Never a great success, he, the main character, represents an individualism that the author exalts. Building as he wishes, without regard for popular architectural styles, FTP who is this red-haired protagonist of Ayn Rand's *The Fountainhead*?

Answer: **Howard Roark**

14. The first name's the same, and that's all we want. One is a con who works for a mafia syndicate who was recently released for 15 years in prison. He arrived in a "mock-Miami" city where he was nearly killed in a failed drug exchange. After acquiring any and all property in Vice City, he proceeds to rub out Sonny Forelli. The other is a quarterback who, after playing for both the Arena and Extreme football leagues, came in for an ineffective Kordell Stewart and became the Steelers' starter. FTP, give the first name of both the main character from Grand Theft Auto: Vice City and the starting quarterback for the Pittsburgh Steelers.

Answer: **Tommy** (Vercetti and Maddox)

15. The solution to the brachistochrone problem, this curve traces the least-time path between two points in a gravitational field. Expressed parametrically as  $x$  equals one minus cosine theta and  $y$  equals theta minus sin theta, it satisfies the Euler-Lagrange equation. It can be generated by tracing the path of a point on the surface of a circle rolling along a line on a plane. FTP what is this curve that resembles repeated mounds?

Answer: **Cycloid**

16. She is currently vice president of the literary group PEN. Her non-fiction works include: *The Essential Gesture*, *On the Mines*, and *The Black Interpreters*. But she's best known for fiction works such as *A Guest of Honour*, *The Conservationist*, and *Burger's Daughter*. FTP name the first female resident of an African nation to win the Nobel Prize in Literature.

Answer: **Nadime Gordimer**

17. Based on the slogan, "Business, not politics" this plan provided for a reorganization of the German Reichsbank under Allied supervision. Reparation payments of 1 million gold marks were to be made in annual increments increasing to 2,500,000 in 1929. In the meantime, Germany was to receive a foreign loan of 800,000,000 gold marks. FTP, what was this 1924 plan proposed by a future Vice-President of the United States?

Answer: **Dawes Plan**

18. A 1989 Pritzker Architecture Laureate, this Canadian-born architect's first major work in his adopted hometown of Los Angeles was the Walt Disney Concert Hall. Believing that "Architecture is Art" he also designed the Cabrillo Marine Museum in 1979. FTP, name this architect who designed the Peter B. Lewis Building and the Guggenheim Museum in Bilbao, Spain.

Answer: Frank **Gehry**

19. This mineral exhibits piezoelectricity, and makes up arkose sandstone. It has a Mohs hardness of 7. Cryptocrystalline varieties include chalcedony and flint; other forms of it include obsidian and amethyst. FTP, name this mineral with chemical formula  $\text{SiO}_2$ .

Answer: **quartz** [accept silicon dioxide or silica before formula is given; prompt afterwards]

20. Schumann told the world to keep its eyes on him in 1853, prophesying his genius. It was not until 1871 when he became truly famous with the first performance of his Requiem, which used text from the Lutheran Bible. His compositions from then on were marked by strict classical form, in contrast to his rival Wagner. For ten points, name this composer whose only deviation from traditional form was his gypsy tinged music such as the finale of his 1877 violin concerto and the set of 21 Hungarian Dances.

Answer: Johannes **Brahms**

21. The main focus of this drug is pain relief, however it may also alleviate anxiety; induce relaxation, drowsiness, and sedation; and may impart a state of euphoria or other enhanced mood. For centuries, it was used in medicine as a painkiller, which led to the development of other more potent drugs in the same group. FTP name this drug whose key active ingredient is morphine, and that is derived from the unripe seedpods of the poppy.

Answer: **Opium**

22. Its major processing activity is glycosylation: the adding of sugar molecules to form glycoproteins. In its outbound path transition vesicles pinch off from the surface of the endoplasmic reticulum and move toward the cis type of this organelle. Their structure consists of a stack of cisternae located between the endoplasmic reticulum and the cell surface. For ten points, identify these organelles named after an Italian scientist.

Answer: **Golgi** apparatus or bodies

23. Set in Peking during legendary times, the plot revolves around the attempt of the Prince Calaf to win the hand of the titular princess, who known for her icy temperament has failed suitors executed. The minister's Ping Pang and Pong fear for the life of Calaf, but he can not be dissuaded. FTP, Calaf wins the princess' hand in what opera by Giacomo Puccini

Answer: **Turandot**