

TOSSUP 1

This band, inducted into the Rock and Roll Hall Of Fame in 1996, pioneered progressive rock music in the late 1960's and 70's. Their first album, *The Piper At The Gates Of Dawn*, was written primarily by a recently deceased band member, who was kicked out of the band after his addiction to LSD grew. After a few psychedelic and experimental albums, such as "A Saucerful of Secrets", the band was finally rewarded by "Meddle", which was critically acclaimed and peaked at #3 on UK charts. FTP, name this band, most famous for "The Wall" and "The Dark Side Of The Moon".

Pink Floyd

BONUS 1

BONUS FTPE, name the track on *The Dark Side Of The Moon* given a line from the song.

10: "Ticking away the moments that make up a dull day"

Time

10: "Grab that cash with both hands and make a stash."

Money

10: "God only knows it's not what we would choose to do."

Us and Them

TOSSUP 2

Flourishing from the 12th century through the late 1600s, it was introduced in the design of the Abbey of St.-Denis, a church in northern France built in 1144. It quickly spread throughout Europe and inspired regional variations, such as the Rayonnant style, named for its characteristic geometric rose windows. Associated with cathedrals in northern Europe, it is often identified with its immense open spaces, flying buttresses, and ornate decoration. FTP name this architectural style, whose name originated as a term of disapproval used by Renaissance humanists who viewed it as the barbaric invention of a certain Germanic tribe.

Gothic style

BONUS 2

FTPE identify the following architectural terms.

10: This term refers to an arched ceiling and includes the barrel, groined, and ribbed varieties.

Vault.

10: This term refers to a collection of arches supported by columns, or a passageway formed by those arches.

Arcade.

10: This term refers to a horizontal projection supported only on one side. Examples are balconies and beams.

Cantilever.

TOSSUP 3

His name means “bright” in Sanskrit, and he was the third child of Kunti. He was the master archer of the Pandavas, and was also their leading warrior in the war against the Kauravas. However, he was reluctant to take part in the battle, because the Kauravas were his own cousins. FTP name this major character of the “Mahabharatha”, who is famous for receiving advice from Krishna in the “Bhagavad Gita”.

Arjuna (accept Arjun)

BONUS 3

FTPE name these other figures who interact with Arjuna in the “Mahabharatha”.

- 10: This god of fire asks Arjuna to burn down a forest, and in return he gives Arjuna the Gandiva bow.

Agni

- 10: Arjuna entered the war with a flag bearing this monkey god who figured more prominently in the “Ramayana”.

Hanuman

- 10: Arjuna was born out of a union involving Kunti and this god, chief deity of the “Rigveda” along with Agni and god of weather and war.

Indra

TOSSUP 4

The tone is initially somewhat lighthearted, as the Air Cavalry captures a beach just to be able to surf it. The episodes of the film quickly become much darker, such as when a family on a boat is massacred by when a woman moves to protect what turns out to be a puppy. The only member of the swift boat crew left alive at the end is the surfer Lance, who appears to have gone native at the time Willard cuts down Kurtz with a machete. FTP, identify this film adaptation of *Heart of Darkness* set in the Vietnam War, directed by Francis Ford Coppola.

Apocalypse Now

BONUS 4

Identify these war films FTPE.

- 10: This Steven Spielberg film is known for its grisly opening sequence showing the early minutes of the D-Day landings.

Saving Private Ryan

- 10: This movie inspired a TV series that lasted nearly three times as long as the Korean War did in real life.

M*A*S*H

- 10: Stanley Kubrick’s entry into the genre features urban warfare during the Tet Offensive in Vietnam.

Full Metal Jacket

TOSSUP 5

According to fossil records, it appeared about 25 million years ago and, along with the Boto and La Plata species, was one of the few to make freshwater its exclusive habitat. Based on descriptions in the Erya, scientists estimate that about 5000 of them existed in the third century BC. Its rapid decline began in the 1950's and was further quickened by the construction of the Three Gorges Dam. The last one seen was in 2004, and after a November 2006 expedition organizers declared it "functionally extinct". Called Baiji in Chinese, this is, FTP, what species of dolphin that is critically endangered and possibly extinct?

Chinese River dolphin (accept Yangtze River dolphin, Whitefin dolphin, or Baiji before mention)

BONUS 5

Name these other extinct species, FTPE.

- 10: This animal's name comes from a Khoikhoi word for "zebra" and is distinguished from plains zebras by having stripes on the front part of its body only.

Quagga

- 10: Their closest relative is the Razorbill, and they were the only species in the genus Pinguinus before they became extinct.

Great Auk (prompt on Auk)

- 10: Though most of these pachyderms died out in the Pleistocene period, some lived on Wrangel Island until about 1700 BCE.

Woolly Mammoth (prompt on Mammoth)

TOSSUP 6

He was incarcerated for 29 years in various prisons and asylums throughout France. He burst into tears after the storming of the Bastille, fearing the manuscript he wrote during his month there would be lost forever. Luckily, his manuscript was later found, and published as *120 Days of Sodom*, one of his most graphic works. FTP, name this French writer after whom the word "sadism" is named.

Donatien Alphonse Francois, Marquis de Sade

BONUS 6

FTPE, answer these questions about *120 Days of Sodom* .

- 10: Though not explicitly mentioned, it is suggested that the story takes place after this war, which ended in 1648.

Thirty Years' War

- 10: Pencil and paper ready. Assume there are thirty days a month. Every day from November to February, the prostitutes tell five stories. How many stories are there total?

600

- 10: Sodom was the home of Lot, and was later destroyed by God for its sins, along with this city.

Gomorra

TOSSUP 7

Born into poverty, he became one of the most influential painters of his era. His first works were frescoes about the life of St. Francis, painted on the church at Assisi. His friends and contemporaries included Boniface VIII and Dante Alighieri, of whom he painted a portrait. Other works included frescoes in the Bardi and Peruzzi chapels and The Last Judgment. FTP, name this late medieval Italian painter, whose most famous works are the frescoes in the Cappella degli Scrovegni.

Giotto di Bondone

BONUS 7

FTPE name these Italian artists.

- 10: Best known for biographies of famous artists, his most famous work is the building of the Uffizi Gallery in Florence.

Giorgio Vasari

- 10: This man is famous for his development of one-point linear perspective, and his famous architectural works, such as the dome of the Duomo in Florence.

Filippo Brunelleschi

- 10: This man discovered Giotto's talents, was featured in Vasari's works, and painted the frescoes of the Crucifixion and the Deposition at the Basilica of St. Francis of Assisi.

Cenni di Pepo (Giovanni) Cimabue

TOSSUP 8

After receiving a doctorate in economics, he returned to his native country and became a professor of economics at Chittagong University. In 1974 a famine struck the country, driving thousands of starving people to the capital. This inspired him to find out the true economic of the poor. Later in 1974, he gave his first small loan of \$27 to 42 families to make crafts for sale. This became the concept of micro-credit, giving small loans to people too poor to be eligible for regular loans. FTP, name this Bangladeshi banker who founded the Grammen Bank and received the 2006 Nobel Peace Prize.

Muhammad Yunus

BONUS 8

Name these economic curves FTPE.

- 10: This curve relates the unemployment rate to the job vacancy rate; as unemployment increases there tend to be fewer vacant jobs.

Beveridge curve

- 10: This curve relates unemployment and inflation; higher unemployment is generally linked to lower inflation.

Phillips curve

- 10: This curve relates tax rate and tax revenue; the idea is that above a certain rate, the incentive to work and pay taxes will disappear so revenue will begin to decrease.

Laffer curve

TOSSUP 9

Pencil and paper ready. Joe wants to determine the sum of the first 10 Fibonacci numbers, and he already knows that the 10th Fibonacci number is 55 and that the 11th is 89. To determine the sum, Joe could add all ten numbers, but applying the recurrence relation for the Fibonacci numbers reveals that the sum of the first n Fibonacci numbers is always one less than the $(n+2)$ th Fibonacci number. FTP, determine the sum of the first 10 Fibonacci numbers. You will have 10 seconds.

143 (The 12th Fibonacci number is $55 + 89 = 144$)

BONUS 9

Pencil and paper ready. FTPE, determine the sum of the following sequences.

- 10: All integers whose square is less than or equal to 400. You will have 10 seconds.

0 (For any x , $-x$ is also in the sequence)

- 10: The first 10 natural numbers. You will have 10 seconds.

55 ($(n)(n+1)/2 = 10*11/2 = 55$)

- 10: The squares of the first 10 natural numbers. You will have 10 seconds.

385 ($(n)(n+1)(2n+1)/6 = 10*11*21/6 = 5*11*7 = 385$)

TOSSUP 10

Benedict Oxenstierna, the chancellor, repeatedly attempted to force his sovereign to not make war on a personal basis, but the King refused to view the conflict as anything but revenge. Following the penultimate battle of the war, the King of Sweden fled to the Ottoman Empire, where he persuaded Ahmed III to make war on Peter the Great, with disastrous consequences. That King, Charles XII, was killed at the siege of Frederiksten in Norway, and his country soon went under and signed a peace. FTP name this battle of the early eighteenth century, wherein Sweden and Russia fought the battle of Poltava.

Great Northern War

BONUS 10

Back during the few decades that Sweden was a Great Power, it fought many wars with the surrounding nations in Northern Europe. FTPE, name these things or people from Swedish military

history.

- 10: After first rebelling near Dalarna, he managed to defeat the King of Denmark and split Sweden from that country, then was elected King of Sweden and introduced Protestantism to the country.

King Gustav I (accept Gustavus Vasa, Gustav Eriksson)

- 10: Fought from 1611 to 1613 over trade in the Baltic Sea, it had the same name of a personal union between the various Scandinavian crowns from the previous centuries.

Kalmar War

- 10: This war was fought over the eponymous territory in southern Sweden, long held by Denmark, from 1675-1679.

Scanian War

TOSSUP 11

Rocky and Larry begin by talking about the end of the movement and the people who were in it. Later Larry asks Hickey about the condition of his wife, to which he responds that she is dead. Larry is suspicious of Hickey's story until Hickey finally reveals that his wife was murdered and had not committed suicide. In the end Hickey confesses to murdering his wife in, FTP, what play by Eugene O'Neill which portrays drunkenness and hopeless dreams.

The Iceman Cometh

BONUS 11

Name these other plays by Eugene O'Neill FTPE.

- 10: It is really a trilogy and based on The Oresteia .

Mourning Becomes Electra

- 10: It focuses on the Tyrone family and is considered an autobiographical work.

Long Day's Journey Into Night

- 10: Brutus kills a man, goes to prison, and then escapes to the Caribbean.

The Emperor Jones

TOSSUP 12

In World War I it was produced on a small scale to function as an ingredient in explosives and on a lesser degree as a coolant, although today its use is primarily the latter. When it cleaves in half, it forms two aldehyde groups. This toxic compound with structural formula HOCH₂CH₂OH is a colorless liquid with syrupy texture in pure form. FTP name this compound, with IUPAC name ethane-1,2-diol, whose primary use is in antifreeze.

Ethylene glycol (accept ethane-1,2-diol before mention)

BONUS 12

Ethylene glycol contains two alcohol groups. FTP identify these other functional groups given descriptions.

10: An oxygen atom acts as this group when it is connected to two other substituted alkyl groups.

Ether

10: The key atom of this functional group is nitrogen, and it can transform into an amide if bonded to a carbonyl group.

Amine

10: This functional group consists of a carbon atom triple bonded to a nitrogen atom.

Nitrile

TOSSUP 13

Belonging to the genus *Dugesia*, it possesses two eyespots and lateral flaps that help it detect light and smell. This organism moves by using cilia on the ventral epidermis to create a mucus upon which it glides. It uses flame cells to waft fluid through branched ducts in order to maintain osmotic balance between it and its surroundings. FTP, name these carnivorous, marine flatworms that can be found in almost any kind of moist environment.

Planaria

BONUS 13

FTPE name these parts of a planarian.

10: Located at the anterior end of a planarian is this dense cluster of nerve cells.

Ganglia

10: These extend from the ganglia throughout a planarian's body.

Ventral nerve cords

10: This muscular part of a planarian is responsible for sucking in small pieces of food into the gastrovascular cavity.

Pharynx

TOSSUP 14

William Eaton and James Cathcart attempted to reach a settlement between the two sides, but when that failed, determined a plan for American victory. It began in 1801 with Yusuf Karamanli demanding more tribute and, despite the superiority of one side, lasted until 1805. Following the treaty ending the war, the United States refused to give any more payments, which, up until the war, used 20 percent of the annual income. Marked by the slogan "Millions for defense, but not one cent for tribute," was, FTP, what first war the United States fought following the adoption of the Constitution.

First Barbary War

BONUS 14

Name these important figures or events from the First Barbary War FTPE.

- 10: This ship ran aground, resulting in the enslavement of its crew.
The Philadelphia
- 10: This man led ground troops in destroying the captured Philadelphia.
Stephen Decatur
- 10: He negotiated the treaty with the Pasha of Tripoli.
Tobias Lear

TOSSUP 15

The Ottoman Empire was the last to use it and finally closed it to European traders in the late 1650s. It stretched from the ancient Chinese capital of Chang-an for over 3700 miles and covered many market meccas such as Antioch and Alexandria. Prized valuables such as silver, gems, gold, and wool went East, as well as Christianity and Buddhism; however, today it is remembered for what came west. FTP name this trading route, an idea of the Han emperor, Wu-Ti, which gets its name from a type of cloth.

Silk Road or Silk Route

BONUS 15

Name these other trading organizations or routes, FTPE.

- 10: This Persian route was established by prophets who set up way stations and caravans along the ancient Silk Road route across the Iranian Plateau.
Royal Road
- 10: This route connected the North Sea and Baltic Sea coasts by way of the Vistula and Dnieper rivers to Italy, Greece, Black sea, Egypt. The Silk Road could then be reached from the Black Sea for further transporting.
Amber Route
- 10: This route connected West Africa and Mediterranean countries, it became famous for the vast amounts of ivory and gold that could be found in trains of caravans along the way, and started in the fabled city of Timbuktu.
Trans-Saharan route

TOSSUP 16

While the book as a whole is narrated by Lockwood, the mild new tenant of ThrushcrossGrange, the story is greatly comprised of flashbacks narrated by an old housekeeper, EllenDean, who recounts the tempestuous history of the two families she has served. The action, spanning the course of many years, involves the multi-faceted encounters of the Lockwoods and the Earnshaws, the masters of neighboring estates on the English moors. FTP name this novel about the doomed love between Catherine Earnshaw and the foundling Heathcliff, Emily Bronte's [BRON-taze] only novel, her most famous work.

Wuthering Heights

BONUS 16

FTPE answer these questions about the Bronte family.

- 10: This woman, the oldest Bronte sister, outlived all of her siblings and edited a memorial edition of *Wuthering Heights* after Emily's death.
Charlotte Bronte.
- 10: Charlotte Bronte is most famous for this novel about an orphan who becomes governess at the mysterious Thornfield Hall.
Jane Eyre
- 10: This man, the only son in the Bronte family, held a number of jobs, including portraiture and railroad work, before his death at the age of 31.
Patrick Branwell Bronte

TOSSUP 17

It began as a German attempt to weaken the French and decisively turn the tide of the war in the Germans' favor. The French were poorly prepared to defend themselves due to the removal of the artillery from the area. Although at first it seemed as if German victory was at hand, because of their overcautiousness and a few strategic blunders the battle dragged on for ten months. Upon its conclusion, neither side had gained an advantage over the other. FTP, name this second-bloodiest battle of World War I, fought near a village of the same name on the Meuse River from February to December 1916.

Battle of Verdun

BONUS 17

FTPE, given the country, identify its monarch at the outset of the first World War.

- 10: Austria-Hungary
Franz Josef I (prompt on Franz Josef)
- 10: Italy
Victor Emmanuel III (prompt on Victor Emmanuel)
- 10: Ottoman Empire
Mehmet V (prompt on Mehmet)

TOSSUP 18

It broke a record set by Fordney and McCumber eight years earlier, and it helped fulfill a promise made in the previous election. Its effects were lessened four years later by the Reciprocal Trade Agreements act, and it tried to aid American farmers through protectionism. Sponsored by two Republicans, the act became known by their two names, and despite the efforts of over one thousand economists, President Hoover did not veto this bill. FTP identify this 1930 Tariff, whose high tariff levels may have worsened the effects of the Great Depression.

Smoot-Hawley Tariff Act (or Hawley-Smoot)

BONUS 18

Answer the following related to another famous tariff, FTPE.

10: The prohibitively high Tariff of 1828, which led to the nullification crisis, was given this nickname by opponents.

Tariff of Abominations

10: The controversy about nullification revolved around this state, which wanted to nullify the tariff.

South Carolina

5-5: A similar nullification crisis occurred in 1798, when two states wrote resolutions claiming their right to nullify the Sedition Act. For five points each, name these two states.

Kentucky and Virginia

TOSSUP 19

This novel begins with three people deciding to go to the title character for help. Later on, he is shot down in the street after buying fruit, but doesn't die. Following the death of one of his sons, he calls a conference of mafia leaders to guarantee another son's return home. FTP, name this novel, in which Michael Corleone takes over the family business.

The Godfather

BONUS 19

FTPE, name these important characters from The Godfather.

10: The eldest son of Vito Corleone, he was gunned down at a toll booth

Santino or Sonny Corleone

10: Vito's adopted son, and Consigliere after Genco Abbandando

Tom Hagen [accept either]

10: The American wife of Michael Corleone

Kay Adams

TOSSUP 20

Compared to merge sort, it is entirely in place, and uses less extra storage. Its edge over quicksort is its worst-case run-time of $O(n \log n)$ [oh of en log en]. It runs in two steps, first arranging the data into an implicit data structure, then extracting the root node successively. FTP, identify this sorting technique, wherein the data are arranged into a binary tree with the largest or smallest value at the root.

Heapsort

BONUS 20

Consider the merge sort and quicksort algorithms. FTP, tell which search:

- 10: Performs fewer comparisons?
Merge sort
- 10: Is a stable sort?
Merge sort
- 10: Has a faster average runtime in optimal implementations?
Quicksort