

TOSSUP 1

Reasons for it may have been the ongoing Soviet-Japanese Border War of 1939, and that the Allies did not invite the USSR to the Munich Conference. Viktor Suvorov claimed that Stalin's primary motive for approving it was to create conflict in between countries of Western Europe. It included a secret protocol that divided up several Scandinavian and Baltic countries into "spheres of interest". It lasted only two years and was broken by Operation Barbarossa. FTP, name this non-aggression pact signed by and named for the two foreign ministers of the USSR and Nazi Germany, one of whom has a fiery cocktail named after him.

Molotov-Ribbentrop Pact

BONUS 1

Answer these questions about Operation Barbarossa FTPE.

- 10: Hitler justified Operation Barbarossa by saying that the Germans needed more this, which was first developed in his book *Mein Kampf*. It means "living space" in English.

Lebensraum

- 10: Another one of Hitler's goals for Operation Barbarossa was to exploit its population of the Slavs who lived there, whom he called by this name which in English means "subhuman".

Untermensch

- 10: This Soviet marshal, who commanded Soviet troops at the Battle of Khalkhin Gol against Japan, led the Soviet counterattack and liberated the USSR from Nazi control before taking Berlin.

Georgy Konstantinovich Zhukov

TOSSUP 2

Born to Leslie Stephen and Julia Duckworth at Hyde Park Gate in London, she suffered bouts of acute mental disturbance from the time of her mother's death until her own. In therapy for one such incident, she founded the Hogarth Press with her husband Leonard. With Leonard and her sister, Vanessa Bell, she formed the nucleus of the Bloomsbury Group. She is credited with bringing techniques such as stream of consciousness and interior monologue into the mainstream of fiction. FTP name this author of *Mrs. Dalloway* whose instability led her to drown herself in the Ouse:

Virginia Woolf

BONUS 2

FTPE, name these other works by Virginia Woolf:

- 10: This novel is in three sections and presents the painter, Lily Briscoe, and the Ramsay family:

To the Lighthouse

- 10: An essay based on two lectures Virginia Woolf delivered in Cambridge on "Women and Fiction", it argues that women will not be able to write well until they enjoy the advantage suggested by its title:

A Room of One's Own

- 10: A fantastic biography which traces the history of the title character through four centuries and both male and female manifestations:
Orlando

TOSSUP 3

Henry was forced to fight the First Battle of Langensalza against pro-Papal aristocrats who were more than happy to hear of his de jure deposition - unfortunately for them, it was only nominal, and they were duly crushed. After reconciliation, Henry fought another force of princes under the antiking Rudolf, whom he wiped out, and then turned against Robert Guiscard, who aided Pope Gregory in Rome and repelled the Germans from southern Italy. This conflict would not end for four hundred years, as each succeeding Pope continued to try to fight the practice of secular authorities' creation of bishops. FTP name this conflict between Catholic Church and Holy Roman Emperor, which was known for Henry IV's Walk to Canossa and backing down to Pope Gregory VII.

Investiture Controversy

BONUS 3

FTPE name these rulers of the Norman states in southern Italy during the later Middle Ages.

- 10: Guiscard's brother, he was the first Count of Sicily - called the Great Count - and ruled for thirty years.
Roger I Bosso (accept either underlined answer)

- 10: Roger I and the Guiscard were both members of this Norman family, originating in the Cotentin Peninsula and also taking part in the Norman Conquest of 1066 and the First Crusade.
Hautevilles

- 10: The following dynasty, it was begun by Frederick I of Swabia and were also Holy Roman Emperors and Kings of Germany until 1250.
Hohenstaufens (accept Staufers)

TOSSUP 4

After a trip across a pool, the field was narrowed on the Steps of Knowledge, where the teams had to answer questions about the episode's backstory. This stage was followed by an opportunity for the remaining teams to collect Pendants of Life, which would protect them from the guards in the show's final challenge. Kirk Fogg and a talking Olmec head named Olmec hosted, FTP, what Nickelodeon game show in which contestants sought out semi-historical artifacts in an elaborate maze?

Legends of the Hidden Temple

BONUS 4

Dicn't get stuck in the Shrine of the Silver Monkey! Name these Nickelodeon game shows FTPE.

- 10: It went through several iterations, including a “Global” version which concluded every episode with a climb up the Super Aggro Crag. The winner received a “glowing piece of radical rock.”

GUTS

- 10: It nominally featured a quiz portion, but the show’s big draw was the slime-oriented physical challenges.

(Family) Double Dare

- 10: In the final phase of this video-game oriented show, the winning team played a game in front of a bluescreen, appearing to the audience like they were inside a video game.

Nick Arcade

TOSSUP 5

Their reactivity can be explained using the HSAB theory. Examples include ytterbium (III) triflate and iron (III) chloride. Their strength is more difficult to define than the strength of their counterparts under the Bronsted-Lowry or Arrhenius definitions. While their Bronsted-Lowry counterparts are defined as being able to donate hydrogen ions, they are defined as more generally as being able to accept an electron pair. FTPE, name these compounds, also called electrophiles.

Lewis acid

BONUS 5

FTPE, classify these compounds as Lewis acids or Bronsted-Lowry acids.

- 10: Sulfuric acid, H₂SO₄

Bronsted-Lowry acid

- 10: Aluminum chloride, AlCl₃

Lewis acid

- 10: Boron trifluoride, BF₃

Lewis acid

TOSSUP 6

Each prayer includes a confession called the vidduy [vih-DOO-ee]. Before sundown, a large meal is consumed. Occuring on the tenth day of the month of Tishre [TISH-ray], it is marked by prayer and solemnity. On this day, people ask God to seal them in the Book of Life for a good year. FTPE, name this most holy day of the Jewish year on which observant Jews fast and ask atonement from God.

Yom Kippur

BONUS 6

FTPE, name these other Jewish holidays.

10: This 8-day-long holiday takes place on the 25th of Kislev [KISS-lehv] and is also called the "Festival of Lights."

Hanukkah

10: On this holiday Jews eat matzah [MAHT-zah] to commemorate their peoples' exodus from Egypt in Biblical times.

Passover

10: This harvest festival, usually occurring in October, is celebrated by building a three-sided structure with an open roof and by shaking the lulav [LOO-lahv] and etrog [ET-rohg].

Sukkot

TOSSUP 7

This American poet was born in 1930. His works combined have sold more than 14 million copies, even though none of them were published in paperback. After once working for Playboy as a writer, he decided to concentrate on creating children's literature. FTP, name this author of the collections "A Light In The Attic" and "Where The Sidewalk Ends".

Shel Silverstein

BONUS 7

FTPE given a work, name the children's poet who penned it.

10: "The New Kid on the Block", "A Pizza the Size of the Sun"

Jack Prelutsky

10: "How The Grinch Stole Christmas"

Dr. Seuss (accept Theodore Seuss Geisel)

10: "A Child's Garden Of Verses"

Robert Louis Stevenson

TOSSUP 8

This is one of the primary methods of speciation, in which peripheral populations are isolated. It is unlike sympatric speciation, in which populations are not extrinsically separated, and parapatric speciation, in which the populations in question are still within mating range of each other. FTP, name this method of speciation in which two populations are geographically isolated and evolve to different environmental conditions.

Allopatric speciation

BONUS 8

FTPE, name these other mechanisms and theories of speciation.

10: Species diverge according to the attractiveness and fertility of individuals.

Sexual selection

10: Individuals mate with others that are either similar or dissimilar from themselves in a specific aspect.

Assortative mating

10: Evolutionary change in a species occurs sporadically and early in a species' genetic history.

Punctuated equilibrium

TOSSUP 9

When studying the greenhouse effect, it is helpful to think of the earth as one of these. Doing so allows the assumption that the incoming solar radiation always equals the energy radiated from earth. After repeated efforts, the Stefan-Boltzmann law is the currently accepted model for the flux emitted by, FTP, what class of objects that absorb all electromagnetic radiation?

Black bodies

BONUS 9

FTPE, answer these questions about black body modeling.

10: This first model developed for black body radiation diverges wildly from experimental data at high wavelengths.

Rayleigh-Jeans law

10: This divergence was given what alarmist name?

Ultraviolet catastrophe

10: This later law is more accurate at high wavelengths, but diverges at shorter wavelengths.

Wien's law

TOSSUP 10

Rusty Richardson and Mahlon DeLong conducted studies on this by observing the release of acetylcholine from basalis neurons. It was first studied by Edward Thorndike, who placed several cats in puzzle boxes and observed their behavior while trying to escape. He noted that at first, it took the cats a long time to escape, but over time, ineffective responses began occurring less, so the cats escaped more quickly. A more famous psychologist built upon Thorndike's ideas to suggest a more detailed theory based on reinforcement, punishment, and extinction. The use of consequences to shape behavior is, FTP, what form of conditioning whose most famous proponent was B.F. Skinner?

Operant conditioning

BONUS 10

Answer these questions about a different type of conditioning, FTPE.

10: The basic form of it states that “When two things occur together, the appearance of one will bring the other to mind.”
Classical conditioning (accept Pavlovian, respondent, or alpha conditioning)

10: He famously demonstrated classical conditioning by getting dogs to associate a ringing bell with a treat.
Dogs

10: John B. Watson provided empirical evidence of classical conditioning when he conducted an experiment on this 11 month old infant.
Little Albert (accept Albert B)

TOSSUP 11

Pencil and paper ready. Assume the acceleration due to gravity is 10 meters per second squared. Sisyphus is pushing a 100 kilogram boulder up a plane inclined at 45 degrees. After he has pushed the boulder for 2 meters along the slope, he wants to know the work he has done on the boulder. He gets irritated that he doesn't know the force he exerted on the boulder, then realizes it doesn't matter, because the work he did is equal to the change in potential energy of the boulder. FTP, how much work did Sisyphus do on the boulder, considering he is now square root of 2 meters higher up than when he started?

$1000\sqrt{2}$ joules

BONUS 11

FTPE, give the work done by...

10: a man holding a box in the air with a rope and a pulley.
0 joules

10: a force that accelerates a 2 kilogram block from rest to a speed of 3 meters per second.
9 joules

10: gravity on a 1 kilogram ball dropped from a height of 3 meters.
30 joules

TOSSUP 12

His cycle “The Stations of the Cross,” part of the collection of the National Gallery of Art, doesn't bear much resemblance to the usual iconography. Instead, large canvases are painted white, with vertical black lines of varying thicknesses appearing on each canvas. The cycle is the highest achievement of, FTP, what color field painter known for his “zips,” vertical lines of color breaking up otherwise single-color paintings?

Barnett Newman

BONUS 12

Name these color field painters FTPE.

10: His paintings generally are a single flat color or a single irregular shape over a white background.

Ellsworth Kelly

10: His most famous works are chevrons and targets of various colors, the paint washed into the canvas.

Kenneth Noland

10: His work is less hard-edged than his contemporaries. Large, blurry rectangles of color appear to float over the background in his famous abstractions.

Mark Rothko

TOSSUP 13

Thomas Benton declared it “a Monster” and said it would “devour” western towns. Originally intended to emulate its predecessor, it was not a successful institution until the reforms of Langdon Cheves, who proceeded to resign after 3 years. The Whigs attempted to make it the focus of the 1832 election, but with Andrew Jackson’s victory its demise was assured. FTP, name this financial institution which Nicholas Biddle oversaw from 1822 until its collapse in 1836.

Second Bank of the United States or Second National Bank [Do not accept (First) Bank of United States]

BONUS 13

Name these other economic choices of Andrew Jackson FTPE.

10: Jackson chose to take the government’s funds out of the bank and put them into these.

pet banks

10: To oppose the standard currency the bank was distributing, Jackson declared this law, which said only gold or silver could be used to purchase public land.

Specie Circular

10: Following Jackson’s departure and the bank’s destruction, this depression hit the country.

Panic of 1837

TOSSUP 14

In the exemplar of the genre, *Lazarillo de Tormes*, the hero gets little food from his various masters, but manages to make the blind man jump into a statue, make the priest think a mouse is stealing bread, and go around begging for a supposedly rich minor noble. In the end, he settles down and marries a prostitute. FTP, identify this genre of novel originating in Spain, wherein a roguish young man outwits his masters.

Picaresque or Picaresco

BONUS 14

Answer these questions about another old literary archetype FTPE.

10: Tirso de Molina's "El burlador de Sevilla" is the first written version of the story of this legendary womanizer.

Don Juan

10: This poet's version of the Don Juan story portrays him as more of a victim of circumstance than an uncaring libertine.

George Gordon, Lord Byron

10: This man's 1787 opera version, "Don Giovanni," is the seventh most performed opera in the US.

Wolfgang Amadeus Mozart

TOSSUP 15

Pencil and paper ready. A student wishes to determine the number of diagonals in a dodecagon. This value can be found by finding all the diagonals which start at a given point, remembering that the diagonals can go anywhere that is not the given point or directly next to it. Note, however, that this method will count each diagonal twice in this 12-sided polygon. FTP, how many diagonals does a dodecagon have? You will have 10 seconds.

54 (12 times 9 over 2)

BONUS 15

Pencil and paper ready. FTPE, determine:

10: The area of a square with perimeter 24π . You will have 10 seconds.
 $36\pi^2$

10: The area of a hexagon with perimeter 24π . You will have 10 seconds.
 $24\pi^2\sqrt{3}$

10: The maximal area of any figure with perimeter 24π . You will have 10 seconds.

10: 144π (The maximal area for a given perimeter is determined by a circle)

TOSSUP 16

It says that Persians consider every matter of importance twice: once while drunk and once while sober. If they make the same decision both times, they go with it. Aside from drunk Persians, the work meanders over such subjects as Egypt and the Nile, the history of writing, and the cultures of just about everywhere its author claimed to have wandered. Arguments about its accuracy have raged for centuries, but the author sure did know a lot about the Greek war with Persia. FTP, name this work that recounts the tale of the ill-fated Croesus and his war with Cyrus the Great.

The Histories

BONUS 16

Identify these historians of various eras from works FTPE.

- 10: John Adams, 1776
David McCullough
- 10: History of the Peloponnesian War
Thucydides
- 10: Democracy in America
Alexis de Tocqueville

TOSSUP 17

TOSSUP One distinguishing characteristic of this instrument are the movable, raised frets which allow for fine tuning. Normally it has from 18 to 20 strings, of which 6 to 7 are playable and the rest provide the drone noise underneath. The Beatles are credited with making the instrument famous in the West with their songs “Within You Without You” and “Norwegian Wood”. FTP, name this instrument originating in India played most famously by Ravi Shankar.

Sitar

BONUS 17

Identify these string instruments FTPE.

- 10: This instrument’s strings are sounded by a wheel that is turned with a crank; Sting played one at the 2005 Academy Awards.
Hurdy gurdy
- 10: These folk mainstays have damper bars that form chords on the plucked strings.
Autoharp
- 10: Played with two mallets, the strings are tuned in a diatonic sequence across a trapezoidal sounding board.
Hammered dulcimer

TOSSUP 18

Radishchev, in his *Journey*, wrote of him as a warning to the Tsarist state, as his actions had led the Tsarina to scrap most of her reforms. His greatest achievement, the fall of Kazan, was short-lived, as Generals Panin and Mikhailov moved against him. Cossacks from his armies betrayed him and delivered him to Aleksandr Suvorov, who had him executed in 1775. FTP name this Russian pretender and leader of a peasant revolt during the reign of Catherine the Great.

Yemelyan Pugachev

BONUS 18

FTPE name these people and things from the military career of doughty old Aleksandr Suvorov.

10: At the Battle of Maciejowice, Suvorov's troops captured this man, leader of the Polish rebels, who had fought as a colonel in the American Revolutionary War.

Andrzej Tadeusz Bonawentura Kosciuszko

10: Suvorov fought his greatest campaign in the War of the Second Coalition in 1799 under this Tsar, successor to Catherine the Great.

Pavel I (accept Paul I, prompt on Pavel and equiv.)

10: Suvorov helped dispatch this short-lived entity in the late 1760s immediately prior to the partition of Poland, thoroughly defeating its leaders Pulaski and the Frenchman Dumouriez.

Bar Confederation (accept variants)

TOSSUP 19

One won a prize in the International Obfuscated C Code Contest for the "worst abuse of the rules" because it was a zero-byte program. Trying to find the shortest one possible in a certain programming language is somewhat of a competition between experienced programmers. They are relatively easy to write in JavaScript because printing a JavaScript function prints the function's declaration and all of the code in it, but in most languages they are not easy to make because the program may not take input in any form during runtime. FTP, name this kind of program whose only output is its source code.

Quine

BONUS 19

FTPE answer the following questions about "The Game of Life" which deals with cellular automata, also related to self-replication.

10: It was developed by this British mathematician in 1970.

John Horton Conway

10: A "dead" cell needs this many neighbors to come to life.

3

10: This smallest kind of "spaceship" has a base of three cells, with one cell directly above one of the end cells and another cell two spaces above the middle cell.

Glider

TOSSUP 20

In medieval times it was referred to as Jayhoun, thought to have derived from the biblical Gihon. Part of its current name translates as "sea" or "very large river." Although it rises in the Pamir mountains from a large glacier, massive irrigation by countries such as Turkmenistan and Uzbekistan have diminished its supply of water to a once-vast lake. FTP, name this longest river of Central Asia which feeds into the Aral Sea from the south.

Amu Darya

BONUS 20

The Amu Darya and the Aral Sea were once located within the Soviet Union. FTPE, name these other physical features of the former Soviet Union.

- 10: The largest river system draining into the Arctic Ocean, one of its many sources is Lake Baikal.

Yenisey River

- 10: Bordering Russia, Mongolia, China, and Kazakhstan, this mountain range is the birthplace of the Turkic peoples and contains the sources of the Ob', Yenisey, and Irtysh rivers.

Altay mountains

- 10: Often included as part of Europe, it is the highest point in that continent and is located near Russia's border with Georgia.

Mt. Elbrus