

1. He is obsessed with the nature of evil and the treatment of patients and prisoners. This generous and philanthropic doctor’s colleagues ostracize him when he develops a drug to separate good from evil. With no other option, FTP, what Doctor unleashes the evil Edward on London when he tests the serum on himself in a novel by Robert Louis Stevenson?

ANS: Dr. Henry _Jekyll_ (Jekyll & Hyde is not acceptable)

2. It includes the intermittently flowing Furnace Creek and Amargosa River. It’s bordered on the west by the Panamint Range, on the East by the Amargosa Range, on the south by Badwater, and on the north by Telescope Peak. Despite gold and borax found here, most early settlers hurried through, this region sits in California and Nevada. FTP name this valley, the lowest point in North America.

ANS: _Death Valley_

3. Temperature, volume, pressure, enthalpy and entropy are examples of these. The value of one of these is dependent on the conditions of the system, not the process used to achieve those conditions. FTP, give this chemical adjective, the opposite of a path variable.

ANS: _State_ variables, or _State_ functions

4. As a Representative, he supported the mild Tariff of 1816 against the opposition of Daniel Webster. In the 1824 election, he appeared as the vice-presidential candidate of both John Quincy Adams and Andrew Jackson, and strangely enough he eventually served under both. FTP, who anonymously published The South Carolina Exposition, which proposed that the states should nullify the Tariff of 1828?

John C. _Calhoun_

5. “A Red-Headed Woman Makes a Choo-Choo Jump Its Track,” “Leavin’ for the Promised Land,” “A Woman is a Sometime Thing,” “It Ain’t Necessarily So,” and “Summertime” are among the songs in it. It was based on a novel and play by DuBose Heyward, and was later recorded by Miles Davis and Gil Evans. FTP, what is the opera set on Catfish Row in Charleston, South Carolina, composed by George Gershwin?

Porgy and Bess

6. Its most famous historical king was Epaminondas, although its legendary ones included Laius and Pentheus. This city-state shared a poorly defined border with Athens to the south, leading to constant tensions between the two which came to a head in the Peloponnesian war, which she entered on the side of Sparta. It was surrounded by seven gates, one of which saw the brothers Polyneices and Eteocles kill each other in battle. FTP, identify this Greek city-state, founded when Cadmus sowed the dragons teeth.

Thebes

7. He’s not Picasso, but one his most famous works is titled “The Man with the Blue Guitar.” He won the National Book Award twice, the Bollingen in 1949, and the Pulitzer in 1955, only a few months before his death. FTP, name the author of the collections “Harmonium” and “Ideas of Order,” an insurance executive by day, who wrote “Thirteen Ways of Looking at a Blackbird” and “The Emperor of Ice Cream.”

Wallace _Stevens_

8. Two examples of involuntary actions to maintain this are teeth chattering on a cold day, or a stomach contracting and ‘growling’ to indicate nutrition is needed. In a multicellular organism, an equilibrium is

maintained by physical and chemical processes. FTP, name this physiological equilibrium, from the Greek words for 'same standing'.

ANS: _homeostasis_

9. After growing up in Pittsburgh and becoming a billionaire in 1996 by selling Broadcast.com to Yahoo!, he bought his favorite sports team in January 2000 for \$280 million. He kept on coach Don Nelson and all-star guard Michael Finley. He has accumulated over a half million in fines this year for criticizing the league and its officials, and once for running onto the court during a fight. FTP, name this fun-loving owner of the Dallas Mavericks.

ANS: Mark _Cuban_

10. One of the first post-classical artists to enjoy equal fame with his work, it probably helped that he signed it. The first in a line of famous Florentine Fresco painters, he brought flat Byzantine figures into space, and made art worth looking at again. FTP, identify this artist, rumored to have been a friend of Dante, and whose most famous works are in the Arena Chapel in Padua.

Giotto di Bondone

11. His writings include "Hope and Suffering" and "Cry in the Wilderness." Most recently, he heads the Commission on Truth and Reconciliation in his home country. Ordained in 1960, this former schoolteacher was the general secretary for the South African Council of Churches from 1978-1984. FTP, name this winner of the 1984 Nobel Peace Prize.

ANS: Archbishop Desmond _Tutu_

12. The first rule: You can't win, the best you can do is break even. The second rule: You can't even break even. The third rule: You can't quit the game. These are the fundamental laws of a field of study which grew out of attempts to create more efficient engines. FTP, what discipline considers a system defined by temperature, volume, pressure, and chemical composition, and describes how this system responds to external actions?

Answer: _Thermodynamics_

13. His work, although modern in style and technique, emphasizes classical Japanese themes. Many of his most important works deal with a man's quest for the beauty and grace he finds in a young woman. He took his own life in 1972, but then, hey, he's Japanese. FTP, name this author of "The Izu Dancer", "The 1,000 Cranes," and "Snow Country," who was awarded the Nobel in 1968.

Kawabata Yasunari

14. An Icelandic princess, she fared no better with the cursed ring Andvaranaut than anyone else: She finds out her husband cheated on her, and so commits suicide; she never does find out that he was ensorcelled by Grimhild when he did it. Her problems didn't start there, however: her story generally starts with her punishment for defying Odin. FTP, who is this Valkyrie, whose punishment had been to be held in a ring of fire until a hero, her eventual husband Siegfried, rescued her?

Answer: _Brunhilde_

15. It has fared very poorly in the country of its setting despite, or perhaps because of, its success overseas. Other contributing factors were its opening being postponed in the face of several new arrivals from Hollywood, a glut of wu-xia films that the West hadn't seen, and the fact that in her home country Zhang Ziyi's previous 2 films also fared poorly. It doesn't help that Red China has never been officially thrilled about any product of

“westernized” Hong Kong. FTP, what is this Ang Lee movie, featuring Chow Yun-Fat and Michelle Yeoh,, which won 4 Oscars in 2000?

Answer: _Crouching Tiger, Hidden Dragon_

16. While some of his followers were burned at the stake or even (as was the case with John Oldcastle, the model for Shakespeare’s Falstaff.) hanged over a fire, he was left alone and died of natural causes. Born in 1324, this Englishman denounced the wealth of the church, denied transsubstantiation, and urged that Bibles be available in the vernacular. FTP, identify this radical Church reformer whose followers were the Lollards.

ANS: John _Wyclif(fe)_

17. Those who only know it from a popular adaptation may be surprised to know that Freddy Aynsford-Hill, and not the male protagonist, marries the female protagonist in the end. Memorable characters include Col. Pickering and the aging raconteur Alfred P. Doolittle. The title alludes to a mythical character who turned a beautiful statue of Venus into Galatea, an actual person. FTP, name this, one of Shaw’s most famous plays.

Answer: _Pygmalion_

18. This conflict began in Machiavellian style: the Russian czar, Danish king and Polish king decided to exploit a youthful monarch’s inexperience to reduce his influence. The supposed dupe responded to Polish and Danish attacks by invading Zealand, forcing Denmark out of the war, defeating superior Russian forces at Narva, and relieving Riga of Polish siege. Forcing Augustus II into flight and installing a puppet king in Poland, the young king turned his attention to Russia. Which war, FTP, had its turning point when Charles XII of Sweden was forced to flee to Turkey after being routed by the Russians at Poltava?

Answer: The _Great Northern War_

19. Karl Jansky in 1931 was the first person to make measurements of objects outside the solar system using this type of device. The largest one is in Puerto Rico, and a group of 27 of them are linked together in Socorro, New Mexico’s Very Large Array. FTP, name this type of telescope featured in the book and movie Contact.

ANS: _radio_ telescopes

20. The species name, camelopardalis, refers to this animal's resemblance to a leopard in coloration and a camel in physique. Lamarck would have said that their frequent use of a particular body part led to its extraordinary length, a trait that was passed down to offspring. This trait allows them to browse in treetops at heights inaccessible to other leaf-eaters. FTP identify these mammals, the tallest animals by virtue of their long legs and necks.

_giraffe_s (or _Giraffa_ camelopardalis)

21. Born in 1818 in ^{Trier} ~~Treves~~, Germany, he came from a line of Rabbis, although his parents converted to Christianity in his youth. He edited the *Rheinische Zeitung* but fled to France when it was suppressed. He took part in the revolutions of 1848 in both France and Germany, and was afterward forced to flee to England, where his development of Dialectical Materialism provided new ways of thinking about history and economics. FTP, what philosopher collaborated with a factory owner from Manchester, in writing *Das Kapital* and the *Communist Manifesto*?

Karl _Marx_

22. He forbade the pilgrimage to Mecca, replacing it with the obligation to serve in the holy war against unbelievers. His followers carried that war for 13 years after his death, suffering their final defeat at the site of his burial, Omdurman. That 1898 victory by Lord Kitchener left Great Britain in control of the Sudan, 14 years

after the fall of Khartoum to this man's forces and 17 years after what Muslim leader, FTP, declared himself the Sunni "restorer of the faith"?

Answer: Muhammad _Ahmad_; accept "the Mahdi", though there have been other claimants to the title.

23. His character is based upon a nobleman from Brittany, who lead the rear guard in a defeat at Roncesvalles. The guard was ambushed by 400,000 Saracens, because their route had been given away by Ganelon. This knight's cousin was Rinaldo, and his best friend Olivier. He was romantically linked to both Aude and Angelica. When he loses his wits, Astolfo rides the Chariot of Elijah to the moon in order to recover them. FTP, name this French romantic hero, whose sword was the Durendal, the most famous paladin of Charlemagne.

Roland or _Orlando_

24. Pencil and paper may be necessary: An electrical circuit consists of a 12 volt source in series with a 6 ohm resistor and two parallel 12 ohm impedances. FTP, what is the current through either 12-ohm component?

Answer: _500 milliamps_ or _half ampere_ or equivalent

1. Identify the work from quotations, 30-20-10.

(30) The first line begins: "On Mondays, Wednesdays and Fridays it was Court Hand and Summulae Logicales, while the rest of the week it was Organon, Repetition, and Astrology."

(20) The last line of the fourth and last book, Candle in the Wind, reads, "...when the Majesty of England drew himself up to meet the future with a peaceful heart.

(10) The last line of the book The Sword in the Stone reads, "Or rather, as I should say, Yes King Arthur."

ANS: The Once and Future King (by T.H. White)

2. Name the early Russian rulers FTPE

According to the Primary Chronicle, he is the first recognized tsar. His dynasty would rule from the ninth century until 1598.

ANS: Rurik (or Riurik, or Ryurik)

This descendent of Riurik and ruler of Kiev converted Rus to Christianity in 988.

ANS: Vladimir

Son of Iaroslav, he earned his surname from the place where he defeated the Swedes in 1240. He later bested the Teutonic knights in 1242.

ANS: Alexander (Nevsky)

3. Identify the following types of radiation.

a. (5) This occurs when a neutron splits; a proton remains while an electron is ejected.

Answer: Beta radiation or beta decay

b. (10) In apparent defiance of their definition, black holes are seen to "emit" this kind of radiation. What actually happens is stranger: pairs of anti-particles spontaneously generate, and the black hole captures one before the two can come back together to annihilate. The "radiation" is the surviving particle moving away from the hole.

Answer: Hawking radiation

c. (15) The speed of light in a vacuum is the absolute speed limit of the universe: however, light slows in various mediums. When a particle moves faster than light in a particular medium, it emits this type of radiation in the same way a supersonic aircraft creates a sonic boom.

Answer: Cherenkov radiation

4. What people eat or drink in mythology is sometimes worth knowing. FTPE:

First, when the gods dropped in for dinner, he served up his son. The gods realized what happened, punished him in Hades, and reincarnated his son- with a new ivory shoulder to replace the one that Demeter had eaten.

ANS: Tantalus

While he was in training to the poet Finegas, Finn MacCool accidentally tasted what, gaining his magic tooth and wisdom?

ANS: Salmon of knowledge

In a slightly similar myth, Odin drank from the well guarded by this Jotun, who demanded Odin's eye.

ANS: Mimir

5. Identify the composers given some works, 5-10-20-30:

(a) "Symphony #3" called the Organ Symphony, and "Samson and Delilah"

ANS: Camille Saint-Saens

(b) "Little Train of the Caipiria" and "Bachianas Brasilieras"

ANS: Heitor _Villa-Lobos_

(c) "Hymns from the Rig Veda" and "The Planets"

ANS: Gustav _Holst_

(d) The operas "Lulu" and "Wozzeck"

ANS: Alban _Berg_

6. The rest of this packet tests your academic knowledge, but to do well on this bonus you will need the strength of street knowledge. Identify the following old school hip-hop groups, FTPE.

(10) Although we don't hear much from MC Ren or Yella these days, this "Worlds Most Dangerous Group" launched the careers of Ice Cube and Dr. Dre, and made Gangsta Rap a national phenomenon.

ANS: _N.W.A._ or, for the less couth _Niggaz with Attitudes_

(10) Pioneers of rap as a political medium, Carlton Ridenhour and William Drayton broke onto the scene with 1987's "Yo! Bum Rush the Show", and in 1999 released "There's s Poison Goin' on" on-line. Their hits include "Black Steel," "911 is a Joke," and, dear to the heart of Hokies everywhere, "Welcome to the Terrordrome"

ANS: _Public Enemy_

(10) Until Kid Rock and Limp Bizkit, they were probably the most successful proponents of rap-rock. They emerged from Queens in the mid 80s, and were among the first bands signed by Def Jam records, probably because Russell Simmons was the brother of one of the band members. Their 1986 "Raising Hell" tour with Aerosmith helped revive that band's career.

Hits include "You be Illin'" and "Down with the King."

ANS: _Run D.M.C._

7. French writers have taken home a lot of Nobel Prizes in Literature over the last century, many of them for landmark works of existentialism. Identify the winners from clues, FTPE.

a.(10) Although born in Ireland, this authors most influential works were written after he had adopted French as his language. His works include "Endgame", "Malone Dies", and "Dream of Fair to Middling Women".

Samuel _Beckett_

b.(10) The only non-Russian to decline the prize, this philosopher and playwright did so because he believed that homage could undermine a writer's integrity, and probably because he saw the prize as a tool of western capitalism. His works include Being and Nothingness, The Flies, and Dirty Hands

Jean-Paul _Sartre_

c.(10) Although a member of Sartre's circle, this novelist and essayist publicly denied that he was an existentialist. He was born in Algeria in 1912, won the prize in 1957, and died 3 years later in an auto accident. His "The Myth of Sisyphus" seeks to answer the question of suicide. More famous works include "The Stranger" and "The Plague"

Albert _Camus_

8. Identify these American astronauts, ten points each.

a. One of the very first astronauts, this veteran of Mercury 4 and Gemini 3 died along with Roger Chaffee and Ed White in the launch-pad fire of Apollo 1.

Answer: Virgil "Gus" _Grissom_

b. He retired as a Major General in the US Air Force, but is best known as the third man of Apollo 11, who stayed in the command module and never landed on the Moon.

Answer: Michael _Collins_

c. This Navy Rear Admiral is most famous for the flight he never took; he missed it for a case of the measles he never had. As a result he missed being on Apollo 13 but did eventually get his ride on Apollo 16.

Answer: Thomas Ken _Mattingly_ II

9. Identify these models for the universe, FTPE.

In this model, the universe expands, but at some point gravity takes over, and collapses the universe

ANS: _closed_

In this model, the universe and gravity reach an equilibrium, and the galaxy maintains a fixed size.

ANS: _balanced_

In this model, the universes expands, then collapses. The collapsed matter triggers another big bang, and the process repeats.

AND: _oscillating_

10. 30-20-10 name the philosopher:

30: He was born in Lycopolis, Egypt and upon meeting Ammonius Saccas exclaimed, "I have found the man I need".

20: His books, called the Enneads were put in order by Porphyry who also wrote an account of his life.

10: Like Plato, he believed in a One to which all things are dependent on, the Nous or mind, and a World Soul and is thus considered the founder of the Neoplatonic school.

Answer: Plotinus

11. FTSNOP, identify the following from the Civil War era.

a. (5) Passed by the Senate in April 1864, the House in January 1865, receiving the necessary three-quarters ratification in December 1865, this amendment finally outlawed slavery in the United States.

Answer: _Thirteenth_

b. (5) Farragut's famous "Damn the torpedoes" quote comes from the battle at this heavily mined harbor.

Answer: Battle of _Mobile Bay_

c. (10) Sometimes called "the Pathfinder," he failed to find suitable passes for the Transcontinental Railroad, but he was instrumental in both the creation of the Bear Flag Republic and its joining the US as California. After failing as a presidential candidate in 1856, he was given command of the Western Department during the Civil War.

Answer: John Charles _Fremont_

d. (10) After Chickamauga, Bragg pursued Thomas' forces to this city, laying siege until Hooker captured Lookout Mountain and Grant took Missionary Ridge.

Answer: _Chattanooga_

12. Name the neurotransmitter, FTPE

The 'universal inhibitor', it is synthesized from the amino acid glutamate.

ANS: _GABA_ or _gamma-amino-butyric acid_

Parkinson's disease results from a deficiency of this neurotransmitter in the substantia nigra in the brain.

ANS: _Dopamine_

The last neurotransmitter in the chain of catecholamine (cat-uh-col-a-mean) synthesis, this is administered to prevent anaphylactic shock by speeding up the heart and constrict blood vessels.

ANS: _Epinephrine_

13. America produced a lot of great 20th century poets, most of whom were men. Identify some who weren't, FTPE.

a.(10) The prototypical Confessional Poet, her work deals with the nightmares and personal trauma which haunted her troubled life. Her marriage to Ted Hughes probably led to her suicide in 1963, although his edition of her poems won the Pulitzer Prize in 1981. Her only novel is the semi-autobiographical "The Bell Jar"

Sylvia Plath

b(10) A native of New England, and an associate of the Confessionals, she made her reputation by revealing the intimate details of her life and personal torment in her poetry. Her first book was "To Bedlam and Part Way Back." Her last, "The Death Notebooks." Her unsuccessful struggles with her own faith were recounted in her "The Awful Rowing Toward God." She committed suicide in 1974.

Anne _Sexton_

c.(10) She was the editor of "The Dial" from 1925-29, but published her own work first in "The Egoist". Her first book "Poems" was published by Hilda Doolittle without her knowledge. Other works include "Where are the Years?" and "O to be a Dragon." Perhaps diminishing her repute, her 1972 death was not a suicide.

Marianne _Moore_

14. In the history of the Academy Awards, few if any years stick in your genial quizmaster's craw like 1977. Answer the following about the winners from that year 5-10-20-30:

a) This semiautobiographical Woody Allen film won Best Picture and Best Director in a year that included the far superior *Julia*, *Close Encounters of the Third Kind*, *The Turning Point*, and even *Star Wars*.

Answer: **Annie Hall**

b) A beneficiary of the voters' infatuation with Annie Hall, this Best Actress winner pretty much played herself, and not all that well, yet somehow trumped fine performances by Jane Fonda, Anne Bancroft, and Shirley Maclaine. For that matter, it wasn't even HER best performance in 1977; that was in *Looking for Mr. Goodbar*.

Answer: Diane Keaton

c) The one that looks the worst seen through the eyes of history is that the Academy passed up their last chance to honor a seriously ill all-time great for Best Actor (his 7th nomination, for *Equus*) in favor of the nominee from the film *The Goodbye Girl*. Making it even sadder, since they have the same first name, the wrong guy stood up when the name was read and had to be pulled back down by those sitting around him. Name both these men.

Answer: Richard Burton and Richard Dreyfuss

15. In the somewhat shortened transition period leading into the Bush administration, one of the main goals was to set up the cabinet. Who got what, FTSNOP?

5- Defense

ANS: Donald _Rumsfeld_

5- Interior

ANS: Gale _Norton_

10- Veteran's Affairs

ANS: Anthony _Principi_

10- Education

ANS: Roderick _Paige_

16. FTP each, identify the type of keyboard given a brief description.

This keyboard layout was designed to prevent stuck keys on typewriters. The most common layout, its name is derived from the keys in the top left corner.

Answer: _QWERTY_

Developed by its namesake in 1936 as an alternative to the QWERTY keyboard, it places all vowels and punctuation marks on the left side, and all consonants on the right side, allowing for faster typing.

Answer: _Dvorak_

This type of keyboard is similar to the QWERTY keyboard but interchanges the letters Q and A, and Z and W. It is commonly used in French-speaking countries.

Answer: _AZERTY_

17. Identify the following plays of Aristophanes, FTPE.

a.(10) Fed up with the destruction wreaked by the Peloponnesian war, the heroine convinces the women of Athens and Sparta to shut themselves away from their husbands until peace is concluded. She is granted the right to dictate the terms.

Lysistrata

b.(10) An impoverished farmer, Strepsiades, sends his son to Socrates "Thinkshop" to learn the art of argument, so that he might avoid paying the creditors. His son Pheidippides does so, but also uses his newfound sophistry to justify beating his father and mother.

The Clouds

c.(10) A satire upon the Athenian practice of paying jurors, Bdelycleon locks his elderly father Philocleon up in his home to stop his compulsive jury service. A mock trial is staged in which Bdelycleon tricks his father into acquitting the family dog of stealing cheese, the first time he has ever voted not guilty.

The Wasps

18. "Water, water everywhere so let's all have a drink!" exclaims Homer Simpson, just don't drink from these bodies of water. Name these bodies from a short description FTPE.

10) Slightly smaller than the Red Sea in size, it is bordered by Poland, Lithuania, Germany and Sweden.

Answer: Baltic Sea

10) Connected to the Sea of Okhotsk by the La Perouse straight and the Yellow Sea by the Korea straight, its northern shore is mostly that of Russia.

Answer: Sea of Japan

10) Connected to Baffin Bay by the Davis Straight and Hudson Bay by the Hudson Straight, this body of water shares its name with a coastal region across from the island of Newfoundland.

Answer: Labrador Sea

19. Identify the chemist for whom a reaction is named.

5: German chemist who synthesized ammonia by combining hydrogen and nitrogen under high pressure, important for the German World War I war effort.

ANS: Fritz Haber

10- German winner of the 1979 Nobel Prize for the phosphonium ylide (ill-id) reagent named for him, which converts an aldehyde or ketone into an alkene.

ANS: Georg Wittig (Vit-tig)

15: He synthesized acetic acid from nonorganic compounds, but the reaction named for him is the synthesis of aspirin.

ANS: Adolph Kolbe

20. Given an English monarch, name his royal house, FFPE.

(5) Richard I

ANS: Plantagenet

(5) Anne

ANS: Stuart

(5) Henry VII

ANS: Tudor

(5) Victoria

ANS: Saxe-Coburg-Gotha

(5) Stephen

ANS: Norman or Normandy

(5)Edward V

ANS: _York_

21. For five points each, given a Shakespeare character, identify their killer. If they survive to the end of the play, say "none."

| | | |
|-------------|---------|----------|
| Macbeth | Answer: | Macduff |
| Desdemona | | Othello |
| Ophelia | | Ophelia |
| Mercutio | | Tybalt |
| Iago | | none |
| Richard III | | Richmond |

22. 30-20-10, name the device.

30: They have been used in seismographs to determine the direction of an earthquake, and have been utilized to determine the mass and shape of the earth.

20: Christiaan Huygens came to a formula governing the timing of their motion: one period equals 2π times the square root of L over g .

10: Foucault suspended one in the Pantheon in Paris; the traces it left in a bed of sand provided his proof of the earth's rotation.

Answer: _pendulum_

23. Identify the Secretary of State, FTPE

Appointed by Truman, he helped establish NATO, encouraged Communist containment, and wanted the US to dissociate from Taiwan.

ANS: Dean _Acheson_

After ably handling the Trent affair, he was stabbed in the attack on Lincoln (who appointed him), but he recovered, and continued serving as Secretary, supporting Johnson's Reconstruction plan.

ANS: William H. _Seward_

This secretary of State ran for president, but lost the nomination in 1876, 1880, and 1892. He got the nod in 1884, but lost to Grover Cleveland

ANS: James G. _Blaine_

24. Name the aircraft from descriptions.

a. (5) The current Air Force One is a VC-25A, a variant of this large Boeing airliner.

Answer: _747_-200B

b. (10) The AH-64 is the primary "tank-killer" of the US Army's helicopter fleet; the "D" variant is known as the "Longbow."

Answer: _Apache_

c. (5) This Mitsubishi-made plane was used by the Japanese kamikaze pilots in World War Two.

Answer: _Zero_

d. (10) This wedge-shaped re-useable launch vehicle was recently scrapped, in part due to the many new technologies it relied upon, such as "linear aerospike" engines, composite fuel tanks, and a new thermal protection system.

Answer: _X-33_ or _Venturestar_

25. Identify the following mostly archaic instruments from descriptions, ten points each.

a. Made of wood and keyed like a woodwind instrument, this "horn" had a brass-style mouthpiece, was bent in a full crook, and sounded rather like a badly played oboe.

Answer: _crumhorn_

b. This instrument was a direct ancestor of the trombone, complete with brass-style mouthpiece and slide.

Answer: _sackbut_

c. The Mozart version of this instrument had black keys for natural notes and white for accidentals, and had knee levers; the Beethoven variant, which evolved to the modern form, reversed key colors, used foot pedals, and had a wider range.

Answer: _piano_