

ST. LOUIS OPEN – 1999
Round Thirteen

Toss-Up Questions

1. When a member of the Nobel Prize committee called this author to inform him he had won the Nobel Prize in Literature, he thought it was a prank and began making fun the man's accent. His first novel, *Hike and the Aeroplane*, was written under the pseudonym Tom Graham. His depictions of the provincialism of the American small town, such as his creation Gopher Prairie, delighted critics, even though he had refused the Pulitzer Prize in Fiction in 1926. FTP, identify this American author of such classics as *Elmer Gantry*, *Main Street*, and *Arrowsmith*.

Answer: Sinclair Lewis

2. The 10th century Persian astronomer Al-Sufi called it "little cloud," but William Huggins determined it wasn't a nebula in the 1800s. V.M. Slipher measured its radial velocity at about 300 kilometers per second, the highest ever, and Edwin Hubble found the first Cepheid variable within it, calculating its actual distance. It is orbited by G1, the most luminous globular cluster in the Local Group and it was recently discovered to have two nuclei, probably due to the fact that it once merged with a smaller galaxy. FTP, identify this galaxy, alternately known as NGC 224 and M31, the closest spiral galaxy to our own.

Answer: Andromeda galaxy

3. Walter V. Waters organized them in Portland, Oregon. They gathered at Anacostia Flats and made their demands to Congress. Most left Washington, D.C. when Congress defeated legislation granting payments. However, about 4000 veterans remained and they rioted on July 28. President Hoover then ordered General MacArthur to end the riot. Four years later, in 1936, Congress passed legislation providing cash payments of the veterans' bonus. FTP, identify this organization of World War I veterans that marched to Washington, D.C. to demand the bonus payments promised them.

Answer: Bonus Expeditionary Force or Bonus Army (accept Bonus March)

4. One of its artistic techniques is called the "Exquisite Corpse," in which four different artists contribute to the representation of a figure. Another technique invented by this movement is frottage, in which pieces of rough wood are placed underneath a canvas, bringing out the texture into the painting. Perhaps the most important technique invented by this artistic movement is automatism, where the subconscious is allowed to direct the hand as it paints. FTP, identify this 20th century off-shoot of dadaism, founded by André Breton, whose most famous proponents include René Magritte and Salvador Dali.

Answer: surrealism

5. You can mix it with cola to make a Trojan Horse. Mix it with ginger beer and you get a Top Hat. Mixing it with orange juice produces a Wasp Sting, while a mix with tomato juice produces a Red Head. A fifty-fifty mix with champagne gives you a Black Velvet, while a half of bitter turns your drink into the famous Black and Tan. Traditionally brewed in Dublin since 1759, this is claimed to be Ireland's most famous export. FTP, identify this thick, black, creamy stout whose cans contain the floating draught system, or widget, to make it taste like it's still on tap.

Answer: Guinness Draught

6. The term was introduced by Alejo Carpentier in the prologue to his *The Kingdom of this World*. Greatly influenced by French surrealism, it professes the capacity to enrich the reader's idea of what is "real" by incorporating all dimensions of the imagination, particularly as expressed in magic, myth, and religion. This 20th century literary movement became associated with the Latin American authors

of El Boom. FTP, identify this literary movement almost exclusively associated with writers such as Jorge Luis Borges, Carlos Fuentes, and Gabriel García Márquez.

Answer: magical realism

7. It was first stated in its approximate form in 1864 by two Norwegian chemists, C.M. Guldberg and P. Waage. In solutions, the concentrations of the products and reactants are used, while in ideal gases the partial pressures are used. It is used to find the empirical equilibrium constant of a reaction, K , denoted with either a C or a P , depending on the phase of the reaction. FTP, identify this law of chemistry that states that in a reaction, the partial pressures or concentrations of the products divided by the reactants will yield an equilibrium constant for the rate of the reaction.

Answer: law of mass action

8. He succeeded Admiral Erich Raeder as commander in chief of the Navy in 1943 and devoted himself to overcoming Allied naval superiority. He devised the “wolf-pack” technique of submarine warfare, which helped to sink 15 million tons of Allied shipping during World War II. He was tried at Nuremberg and sentenced to ten years’ imprisonment, having served as leader of the Reich after Hitler’s suicide. FTP, identify this Nazi naval commander whose sole deed as leader of the Third Reich was negotiating its surrender in 1945.

Answer: Karl Dönitz

9. Situated on the mouths of the Dee and Don rivers, some of its attractions include the Church of Saint Nicholas and the Cathedral of Saint Machar. Until 1996, it was the administrative center of the former Grampian Region, but it is now a unitary authority. It is known as the Granite City because many of its buildings are constructed of local granite, the city’s chief export. It is now the most important fishing port and principle petroleum center in northern Scotland. FTP, identify this industrial center, Scotland’s third-largest city after Glasgow and Edinburgh.

Answer: Aberdeen

10. He was a member of the editorial board of *Fortune* magazine from 1943-48, and served as the U.S. ambassador to India from 1961-63 while on leave from Harvard University. Among his novels is *A Tenured Professor*, but he is better known for his work in economics. His most famous work argued that the U.S. had reached a stage in its economic development that should enable it to direct its resources more toward providing better public services and less to the production of consumer goods. FTP, identify this economist who wrote *American Capitalism* and *The Affluent Society*.

Answer: John Kenneth Galbraith

11. It represents a balanced fusion of the active and contemplative disciplines, a combination of music and mathematics, of art and science, and it includes elements from virtually every cultural endeavor. It dominates the culture of a utopian society in the 23rd century, practiced in its highest form by an intellectual elitist class. Its absolute master starts doubting the virtues of pure intellect, rejects society, and dies tragically attempting to dedicate his life to spirituality. FTP, identify this activity dominated by Josef Knecht, the focus of a novel by Herman Hesse.

Answer: Glass-Bead Game

12. German botanist Ferdinand Julius Cohn contributed to the debunking of this idea by discovering and naming bacteria. German naturalist Theodor Schwann provided additional proof, while Italian naturalist Lazzaro Spallanzani further showed that microorganism-containing solutions that were boiled and then sealed off would remain free of microorganisms thereafter. However, the credit for disproving this theory generally lies with the experiments of Francesco Redi and Louis Pasteur. FTP, identify this idea that stated lower forms of life could randomly reproduce from inorganic substances.

Answer: spontaneous generation or abiogenesis

13. Governor Dunmore dissolved it when it expressed support for the colonists in Massachusetts after the Boston Tea Party. Patrick Henry introduced several resolutions through it condemning taxes not imposed by this body after the Stamp Act was introduced, and it started the careers of such colonial leaders as George Washington and Thomas Jefferson. It first met on July 30, 1619 in Jamestown, Virginia, and consisted of a representative from each county and a governor. FTP, identify this Virginian legislative body, the oldest assembly of citizens in the United States.

Answer: House of Burgesses

14. He worked on the most important aspects of his philosophy at the University of Jena and called it *Wissenschaftslehre*, a discipline devoted to establishing the foundations of individual sciences based on a *Tathandlung*, or a fact not known empirically, but rather with self-evident certainty. He tried to impress his teacher by writing a manuscript on the relation of his ideas to the question of divine revelation, calling it *An Attempt at a Critique of all Revelation*. FTP, identify this 18th century German philosopher and student of Immanuel Kant.

Answer: Johann Gottlieb Fichte

15. His name means “Lord of Wisdom” and he has no physical form. He is worshipped through his divine attributes, or Amesha-Spentas, which include Creative Spirit, Righteousness, Good Purpose, Devotion, Power, Health, and Long Life. His priests are all males and maintain an everlasting fire in his temples, which represents his divine emanation and the light that he represents against the darkness of Ahriman, his evil counterpart. FTP, identify this god of good and wisdom of the Zoroastrian religion.

Answer: Ahura Mazda

16. Louisa marries the banker Josiah Bounderby to protect her brother Tom, who is in his employ. Tom steals from Bounderby and frames Stephen Blackpool, an honest mill hand. Tom is discovered and Louisa begins to realize her disgust for Bounderby as she runs home to her father, Thomas Gradgrind. Tom leaves the country and Louisa secures a divorce from Bounderby, while Gradgrind realizes his error in raising his children in the grimmest of environments. FTP, identify this novel by Charles Dickens, the title of which describes the era in which Gradgrind raised his children.

Answer: Hard Times

17. He married Anne Hegel, the granddaughter of the famous philosopher. His early projects include work on the gyroscope with Arnold Sommerfeld and developing the Erlanger Programme, the study of the properties of a space that are invariant under a group of transformations. He showed that it was possible to consider Euclidean and non-Euclidean geometries as special cases of a projective surface with a specific conic section adjoined. FTP, identify this German mathematician most famous for the surface named after him, a cylinder looped back through itself that cannot be constructed in Euclidean space.

Answer: Felix Klein

18. Eighty-five men of the 3rd light cavalry were convicted of mutiny and sentenced to prison terms. In response to this harsh treatment, members of the 11th and 20th infantries revolted and slaughtered 40 British officers in Meerut. Many local princes and their followers joined in the march to Delhi. When it finally ended, the Mughal Empire had been abolished and the British crown assumed direct control over India, ending the administration of the English East India Company. FTP, identify this 1857-59 rebellion in India that began with the distribution of rifle cartridges greased with cow fat to Hindu troops.

Answer: Sepoy Rebellion

19. It began as a two-volume study in 1890, increased to thirteen volumes by 1915, and was condensed to one volume in 1923. This work influenced Joyce's *Finnegans Wake*, Eliot's *The Waste Land*, and the psychological work of Jung. It is a massive cross-cultural analysis that attempts to discern archetypal or universal elements in religions and magical practices, and its title refers to the branch broken from a sacred tree by Aeneas before his descent into the underworld. FTP, identify this seminal work in anthropology written by Sir James George Frazer.

Answer: *The Golden Bough*

20. The cramped movements of a deformed gnome, the song of a troubadour in front of an Italian castle, the rumblings of a Polish ox-drawn cart, the "Ballet of the Chickens in their Shells," the Russian witch Baba Yaga's ride through the air, and the procession passing through the Great Gate of Kiev: all are movements of this musical piece. When the Russian painter Viktor Hartmann died in 1874, an art show displaying over 400 of his paintings commemorated his passing and inspired this Russian nationalistic suite. FTP, name this Romantic orchestral piece composed by Modest Mussorgsky.

Answer: *Pictures at an Exhibition*

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Bonus Questions

1. Identify these Aztec deities given a description F15PE.

- a) She is the creator goddess of the earth and mankind and became the mother of the sun god Huitzilpochtli when a ball of hummingbird feathers impregnated her.

Answer: Coatlicue

- b) This god of rain was fashioned along with the water goddess and is the father of the moon god Tecciztecatl.

Answer: Tlaloc

2. Given two landmasses, identify the strait that separates them FTPE.

- a) Iran and the Arabian Peninsula

Answer: Strait of Hormuz

- b) India and Sri Lanka

Answer: Palk Strait

- c) Italy and Albania

Answer: Strait of Otranto

3. Identify the Tennyson poems from lines FTPE.

- a) “The woods decay, the woods decay and fall, The vapours weep their burthen to the ground, Man comes and tills the field and lies beneath, And after many a summer dies the swan.”

Answer: Tithonus

- b) “I am a part of all that I have met; Yet all experience is an arch wherethrough Gleams that untravelled world, whose margin fades For ever and for ever when I move.”

Answer: Ulysses

- c) “Sunset and evening star, And one clear call for me! And may there be no moaning of the bar When I put out to sea.”

Answer: Crossing the Bar

4. Identify the following concerning a recent development in chemistry FTSNOP.

- a) (5 points) Identify the recipient of the 1999 Nobel Prize in Chemistry, who won the prize for developing a technique that enables scientists to watch the extremely rapid middle stages of a chemical reaction.

Answer: Ahmed H. Zewail

- b) (10 points) Zewail's technique relies on ultra-fast laser pulses that provide snapshots of the transition states in a reaction. Give the common name for this very fast technique.

Answer: femtosecond spectroscopy

- c) (15 points) Using femtosecond spectroscopy, Zewail and his colleagues first studied a 200-femtosecond disintegration of this compound, observing the precise moment at which the chemical bond between iodine and carbon was about to break.

Answer: iodocyanide or ICN

5. Given a description, identify the following leaders of slave revolts in U.S. history FTPE.

- a) On August 21, 1831, he and five other slaves killed their master and started a general uprising in Southampton County, Virginia. He and 15 of his companions were hanged six weeks later.

Answer: Nat Turner

- b) He planned a slave rebellion in Charleston, South Carolina that was meant to kill the entire white population. His plans, set for June 16, 1821, were leaked to the authorities, who arrested and hanged him and his followers.

Answer: Denmark Vesey

- c) He plotted with Jack Bowler to seize the arsenal at Richmond in the spring of 1800. However, a torrential downpour washed away a bridge vital to the insurrectionists' march. Governor James Monroe had this man and his comrades captured and hanged.

Answer: Gabriel Prosser

6. Given a description, identify the following ancient Greek philosophers, all of whom had an interesting view of the world FTPE.

- a) He discovered that the solar year is about 6 hours longer than 365 days. His claim to fame, however, was the complicated system he had proposed to explain the motions of the sun, moon, and planets through a model of the solar system based on an arrangement of rotating spheres.

Answer: Eudoxus

- b) His only surviving work is *On the Dimensions and Distances of the Sun and Moon*, in which he described a method for estimating the distances of the sun and moon from the earth. However, he is most famous for being the first to assert that the earth revolves around the sun.

Answer: Aristarchus

- c) His research was preserved in Ptolemy's *Almagest*. He discovered the precession of the equinoxes and catalogued, charted, and calculated the brightness of about 1000 stars.

Answer: Hipparchus

7. Identify these greats from chess history FTSNOP.

- a) (5 points) He is the current Professional Chess Association world champion and the highest-rated chess player ever.

Answer: Gary Kasparov

- b) (10 points) This Ph.D. in mathematics was the longest reigning world champion of the modern era of chess.

Answer: Emmanuel Lasker

- c) (15 points) This 18th century Frenchman founded the modern era of chess by emphasizing the importance of pawn structure. He is considered by many to be the greatest pre-20th century chess player ever.

Answer: André Philidor

8. Identify these genres of novels FTPE.

- a) This type of novel, common in German literature, treats the personal development of a single individual, usually in youth. Goethe is usually credited with the first novel of this type, his *Wilhelm Meister's Apprenticeship*.

Answer: bildungsroman

- b) This is essentially a bildungsroman in which the hero finally becomes an artist or poet, and thus the form reflects a characteristic romantic interest in the growth of the artist as a person. Joyce's *A Portrait of the Artist as a Young Man* can be considered among this genre.

Answer: künstlerroman

- c) This a very convenient term applied to novels that are crammed full of reliably correct historical detail but which remain absolutely devoid of literary inspiration.

Answer: professorenroman

9. Identify these different types of thermodynamic cycles given a description FTPE.

- a) This theoretical cycle has a perfect efficiency and consists of an adiabatic compression, followed by an isothermal expansion, followed by an adiabatic expansion, followed by an isothermal compression.

Answer: Camot cycle

- b) This cycle is used in internal combustion gas-powered engines. It consists of six steps: an intake stroke of a mixture of gas and air, a compression stroke that causes the temperature to rise, an explosion, a power stroke in which the air does work by pushing on a piston, a valve exhaust, and an exhaust stroke.

Answer: Otto cycle

- c) This cycle is similar to the Otto cycle, except that only air is admitted in the intake stroke. The air is then adiabatically compressed and fuel is injected into hot air in the form of many small drops. Each drop burns over a small time, giving an approximation of an isobaric explosion.

Answer: Diesel cycle

10. Identify the following concerning the fall of the Roman Empire FTSNOP.

- a) (5 points) This man is generally considered the last Roman Emperor of the west.

Answer: Romulus Augustulus

- b) (10 points) This king of the Ostrogoths became the ruler of the Italian peninsula in 493.

Answer: Theodoric

- c) (15 points) This Gothic chieftain led a rebellion of German troops and deposed Romulus Augustulus in 475. He moved the capital to Ravenna, which was soon besieged and overthrown by Theodoric.

Answer: Odoacer

11. Identify these old church heresies FTPE.

- a) It was condemned by the Council of Ephesus in 431. This doctrine proclaimed that Christ had two natures, one divine and one human, which although distinct are joined in one Person and Substance.

Answer: Nestorianism

- b) A church council at Carthage condemned this heresy in 418. It denies the existence of original sin and the need for infant baptism. It emphasizes human free will as the decisive element in perfectability and minimizes the need for divine grace and redemption.

Answer: Pelagianism

- c) The first Council of Nicaea condemned this heresy in 325, which denied the full divinity of Jesus because God is unbegotten and without beginning. The Son, therefore, cannot be God in the same sense because he is begotten.

Answer: Arianism

12. Given a brief description, identify the painting FTPE. If you need the painter, you will receive five points.

- a) (10 points) A man stands over a map, holding a compass, while pensively staring out of a window that bathes him in sunlight.

(5 points) Jan Vermeer

Answer: *The Geographer*

- b) (10 points) A woman, described by the artist as having a “lavender complexion,” stands leaning against a table in a black, sleeveless velvet dress. Her head is turned to the right, so all the viewer sees is her profile.

(5 points) John Singer Sargent

Answer: *Madame X*

- c) (10 points) Farmers load up their plentiful harvest in the background while three peasant women lurch forward in the foreground, attempting to collect the scanty remains on the ground.

(5 points) Jean-François Millet

Answer: *The Gleaners*

13. Identify these Jewish-American authors from lesser-known works FTPE.
- a) *The Fixer; Dubin's Lives; A New Life*
Answer: Bernard Malamud
- b) *Henderson the Rain King; Dangling Man; Seize the Day*
Answer: Saul Bellow
- c) *Enemies; The Spinoza of Market Street; The Magician of Lublin*
Answer: Isaac Bashevis Singer
14. Identify these eponymous ideas from organic chemistry FTPE.
- a) This rule is used to determine aromaticity and antiaromaticity. A continuous, planar ring of overlapping p orbitals is required for the rule to apply. Otherwise, the system is nonaromatic.
Answer: Hückel's rule
- b) This synthesis requires the presence of a Lewis acid catalyst, such as aluminum chloride or iron (III) chloride. Alkyl halides alkylate benzene to give alkylbenzenes. It is named after two chemists, one French and the other American.
Answer: Friedel-Crafts alkylation or synthesis
- c) This method of amino acid synthesis is named after the German chemist who first performed the process named after him. An aldehyde reacts with ammonia to give an imine, which is attacked by a cyanide ion and results in an alpha-amino nitrile.
Answer: Strecker synthesis
15. Identify these important figures in American history from the 1980s FTPE.
- a) He was appointed Ronald Reagan's secretary of state in 1981, but resigned the next year amid disagreements with other administration officials. He was Nixon's chief of staff after H.R. Haldeman resigned and served as supreme allied commander of NATO.
Answer: Alexander Haig
- b) President Bush pardoned this former secretary of defense under Reagan for his involvement with the Iran-Contra scandal in 1992.
Answer: Caspar Weinberger
- c) This former solicitor general of the U.S. under Nixon was rejected by the U.S. Senate for consideration on the Supreme Court due to his conservative ideology and judicial philosophy. He was nominated by Reagan to the Supreme Court.
Answer: Robert Bork
16. Identify the following one-hit wonder composers from lesser clues FTPE, or FFPE if you need that one hit.

a) (10 points) *La Péri, Polyeucte Overture, Ariane et Barbe-Bleu*

(5 points) *The Sorcerer's Apprentice*

Answer: Paul Dukas

b) (10 points) *Pascal et Chambord, Le Docteur Miracle, Croquefer*

(5 points) *Tales of Hoffman*

Answer: Jacques Offenbach

c) (10 points) Choral Hymns from the Rig Veda, The Perfect Fool, The Wandering Scholar

(5 points) The Planets

Answer: Gustav Holst

17. Identify these psychologists who were pioneers in the field of learning F15PE.

a) This German psychologist performed important experiments on the value of repetition in memory, using nonsense syllables that he invented. He also devised the completion method tests for measuring the intelligence of children that bears his name.

Answer: Hermann Ebbinghaus

b) This American psychologist formulated the law of effect, which stated that the more satisfying the result of a particular action, the better that action is learned. Among his works are *Animal Intelligence, Educational Psychology, and The Measurement of Intelligence*.

Answer: Edward Lee Thorndike

18. Identify the following concerning some playwrights FTPE.

a) This playwright wrote *The Faithful Shepherdess* and *The False One* all by his lonesome, but is better known for his collaborations with another 17th century English playwright.

Answer: John Fletcher

b) This playwright wrote *The Knight of the Burning Pestle* and *The Woman Hater* by himself, but is more famous for his collaborations with the guy from the first part of this bonus.

Answer: Francis Beaumont

c) Beaumont and Fletcher collaborated on this 1609 play about the heir to the throne of Sicily and his dealings with Arethusa, the woman he loves. It is subtitled *Love Lies A-Bleeding*.

Answer: Philaster

19. Identify the following terms concerning your eye (and mine) FTPE.

a) This is the tough, fibrous outer coat that surrounds your eye (and mine) except where it merges with the cornea.

Answer: sclera

- b) This is the intermediate, pigmented layer of your eye (and mine) that lines the sclera and is modified in front to form the diaphragm of the iris.

Answer: choroid

- c) This fluid fills the anterior chamber, the area between the lens and the cornea, and also the posterior chamber, the narrow cleft between the lens and the back of the iris.

Answer: aqueous humor

20. Identify the following concerning a famous 17th century battle FTSNOP.

- a) (10 points) This 1632 battle was a major conflict during the Thirty Years' War between the Protestant Swedes and the imperialist Catholics under Albrecht Wallenstein. It saw the costly victory of the Swedish army in an area about 19 kilometers southwest of Leipzig.

Answer: Battle of Lützen

- b) (5 points) This Swedish king bit the bullet at the Battle of Lützen when he led a cavalry charge into Wallenstein's ranks.

Answer: Gustav II Adolph or Gustavus Adolphus

- c) (15 points) This German duke aided the Swedish forces with a considerable army of his own at the Battle of Lützen.

Answer: Bernard or Duke of Saxe-Weimar

21. Identify the following concerning a certain archaeological discovery FTSNOP.

- a) (5 points) This collection of about 600 Hebrew and Aramaic manuscripts contains several books of the Apocrypha, including *Tobit*, *Sirach*, *Jubilees*, portions of *Enoch*, and the *Testament of Levi*. It also contains the two oldest known copies of *Isaiah* and fragments of every Old Testament book except *Esther*.

Answer: Dead Sea Scrolls

- b) (10 points) This is the Jewish sect that created and preserved the Dead Sea Scrolls in a group of caves on the Dead Sea.

Answer: Essenes

- c) (15 points) Arabic for "stone ruin," this is the site at which the Dead Sea Scrolls were found in 1947. It lies on the northwestern shore of the Dead Sea in Jordan.

Answer: Khirbet Qumran