

Yale University

Bulldogs over Broadway--December 4, 2004

Edited by Mike Wehrman

Packet by Williams A

Tossups

1. In its eighth section, the narrator says that the title creature is involved in all he knows. In the third, he says it is part of the pantomime, and in the fourth that a man, a woman, and it are one. In the second, the narrator is of three minds, like a tree in which there are three of the creatures, and in the first its eye is the only moving thing among twenty mountains. In the twelfth, the river is moving, so it must be flying, and in the thirteenth and last it sits in the cedar-limbs. FTP, name this 1917 Wallace Stevens poem.

ANSWER: "Thirteen Ways of Looking at a Blackbird"

2. He has been featured in numerous works of fiction, including "Lest Darkness Fall" and works by David Drake and S.M. Stirling, and his bitterest enemy was the man who wrote that he was a cuckold in the *Secret History*, Procopius. He earned the rank of general under the reign of Justin I and went on to win victories at Dara and Ticameron. FTP, securing an "Endless Peace" with the Persians and recapturing Italy from the Ostrogoths, who was this Byzantine general under Justinian?

ANSWER: Flavius Belisarius

3. Euler's formula for them states that the sum of the vertices and faces minus the number of edges must be a constant. It cannot be if a graph contains $K_{3,3}$ or G_5 . Perhaps the most famous problem for this system of graphs, solved in 1976, was the proof of the four color theorem. FTP, name these types of graphs defined by the fact that they can be drawn without having edges crossed.

ANSWER: Planar or Plane

4. James Cook departed for his third and final voyage, while in the world of drama Goethe's *Stella* and Klinger's *Sturm und Drang* were first presented. The death of David Hume was marked by the publication of Gibbon's *The History of the Decline and Fall of the Roman Empire* and Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*. FTP, name this year, in which the United States of America declared its independence.

ANSWER: 1776

5. The holding company that sprang from his first business in 1961 counts among its holdings a bank, a phone directory, his country's largest publishing house, his country's largest movie company, three of his country's largest TV stations and a theater and soccer team in his home city of Milan. This last fact prompted him to announce that he would not pursue the contract of David Beckham while on a state trip to Jerusalem. He entered politics in 1993, naming his political party after a soccer chant, becoming President of the Council of Ministers in 1994, and after losing it after a few months, regaining it in 2001. FTP, name this Bush ally who leads the government of Italy.

ANSWER: Silvio Berlusconi

6. Discovered in 1891 by Santiago Ramón y Cajal [kai-al], they are formed from the ectoderm of the developing fetus. Examples include ependymal cells, whose cilia aid fluid circulation, and satellite cell, which help balance the chemical environment. A more common example allows nerve impulses to propagate by saltation instead of as a continuous wave. FTP, name this class of cells that includes Schwann cells and Astrocytes and outnumber neurons nearly fifty to one.

ANSWER: Glial Cells (accept neuroglia and glia)

7. Born in Morganton, NC in 1896 he was elected to the House of Representatives in 1946 but did not run for re-election. He was appointed to the United States Senate in 1954 and stayed there until his

resignation in 1974, having served as chair of the Committee on Government Operations and the Committee on Presidential Campaign Activities. FTP, name this North Carolina Democrat, styled by Richard Nixon a “senile Senator,” who oversaw the Senate Watergate hearings.

ANSWER: Samuel James Ervin, Jr.

8. Recent adaptations of her works include a 1995 film directed by Alfonso Cuarón and a 1991 Broadway musical with music by Lucy Simon. Her first novel was *That Lass o' Lowrie's* in 1877 but she may have been most known in her lifetime for the children's book *Little Lord Fauntleroy*. Name this English playwright and author who, FTP, is best known today for her novel *The Secret Garden*.

ANSWER: Frances Hodgson Burnett

9. Although J.S. Bach wrote six of them in German, and Lully wrote several sophisticated ones, some of which made use of a full orchestra, the form thrived mostly in the medieval period and the Renaissance. Growing out of a descant sung over a cantus firmus, it was the form that gave birth to counterpoint in the Western tradition. For ten points, name this type of choral composition which takes its name from the Latin “movere” or the French word for “word.”

Answer: Motet

10. As the best student in a Jesuit college in Anjou, he received a special dispensation to sleep into the early afternoon. Early rising literally killed him: when summoned to the court of Queen Christina of Sweden in 1649, he was ordered to teach her in the hours before dawn and was dead within a year. This penchant for staying in bed may have been one of the reasons why he had so long to meditate and may have contributed to such works as “The Discourse on the Method” and “Meditations on First Philosophy.”

FTP, name the man who also invented analytic geometry and the dualism that shares his name.

ANSWER: René Descartes

11. His 365 years on Earth have suggested a solarist significance, particularly when compounded with his similarities to Emeduranna, a mythical Mesopotamian king associated with the Sun. At the age of 65, this son of Jared saw the birth of his son Methuselah, and lived another 200 years before his earthly life ended. FTP, name the man who, in Genesis, walked with God and then was no more, because God took him up into heaven.

ANSWER: Enoch

12. Form the possessive by adding “’s” to the noun. In a series of three or more terms with a single conjunction, use a comma after each term except the last. Enclose parenthetical expressions between commas. Place a comma before a conjunction introducing an independent clause. These and seven other rules appear, FTP, in the first chapter of what renowned grammar book, a mainstay in every college student's repertoire since William Strunk and E.B. White first compiled it in 1919.

ANSWER: The Elements of Style (accept Strunk and White before mentioned)

13. Sher Shah managed to drive this man's father into exile to the Saffavid Empire, but his father regained sovereignty twelve years later, only to promptly die. His first four years of rule were dominated by the Regent Bairam Khan, whom he regained power from shortly before his military's crucial victory at the Second Battle of Panipat. His aforementioned father Humayun fell died after a fall down the stairs in his library, while his great-grandson Aurangzeb expanded the empire further into Afghanistan, and his grandson Shah Jahan commissioned the Taj Mahal. FTP, name this third Mughal emperor, grandson of Babur.

ANSWER: Akbar

14. Recently rated the 259th best rock song of all time by Rolling Stone, it first appeared on 1984's *New Positions*. Lines like “I did my best, it wasn't much/ I couldn't feel, so I tried to touch/ But I told the

truth, I didn't come to fool ya," were dropped on John Cale's cover on 1991's tribute *I'm Your Fan*. That cover was featured in 2001's highest-grossing movie, though Rufus Wainwright performed it on the *Shrek* soundtrack. FTP, name this Leonard Cohen song about failed relationships and King David, also recorded by Jeff Buckley on *Grace*.

ANSWER: "Hallelujah"

15. It was first successfully isolated from the reduction of its acid by the de Elhuyar brothers and is vaporized in Sandia National Laboratory's Z-Machine in an effort to produce nuclear fusion. Aside from the more common ore, it can be obtained from scheelite, huebnerite, and ferberite. The thoriated variety is used in vacuum gauges. FTP name this element with the highest melting point of any metal, more commonly found in Wolframite.

ANSWER: Tungsten

16. Pagan idols were long stored here, and its dimensions are 50 feet high, 40 feet wide and 35 feet deep, which doesn't exactly correspond with what its name means. The one Adam built is thought to have crumbled before it was remade by Abraham. It is made of stone and covered with a black curtain, although at time the curtain has been white. FTP, what is this holiest edifice in Islam whose name translates to "cube" and where, in the wall by the Eastern corner, the Black Stone can be found?

ANSWER: The Kaaba

17. Located in Axis II, Cluster B of the DSM-IV-TR classification, this personality disorder, while affecting two percent of adults, mostly young women, is responsible for roughly 20 percent of psychiatric hospitalizations. Characterized by "black and white thinking," mood swings, and disruptions in relationships and functioning in society, its neurological basis is poorly understood, so psychotherapy and dialectical behavior therapy play a substantial role in treating it, in addition to pharmacological treatments. Name, FTP, this disorder, from which Winona Ryder's character suffered in *Girl, Interrupted* that sounds like it's not too serious.

Answer: Borderline Personality Disorder

18. It often is used as part of a group of seven, as in its use as the name of a character in the animé *Full Metal Alchemist*. It generally has a negative connotation, as in the title of an epic silent film, but economists argue that it need not be negative if a market isn't a zero-sum game, or if the good of the whole is not considered to be as important as the good of the individual, the assumed philosophy of the Fox game show using it as its title. FTP, name this desire, implicit in the capitalist assumption that one always acts to maximize one's utility, closely related to the Deadly Sin of avarice.

Answer: Greed (accept equivalents until the reference to the silent film)

19. He workshopped early plays like *No Good Friday* with The Serpent Players, and more famously collaborated with John Kani and Winston Ntshona to workshop his best-known plays, including *Statements After an Arrest Under the Immorality Act*. The subject matter of newer works like *The Captain's Tiger* differs from his earlier plays, since he no longer needs to protest racial separation though 1982's *Master Harold and the Boys* is still frequently revived. FTP, name this South African playwright, best known for the plays *Sizwe Banzi is Dead* and *The Blood Knot*.

ANSWER: Athol Fugard

20. It was designed to allow for the transfer of electricity between two points without the physical connection of the points. The largest example was the "Magnifying Transmitter," although that was not a classical one. The size of the toroid directly relates to the discharge produced. They are technically examples of resonant transformers using two LC circuits. The system must be carefully tuned so that the resonant rise in the secondary produces maximum voltage at the toroid. FTP, name this device, invented and named for Nicola Tesla.

ANSWER: Tesla Coil (do not prompt on Tesla)

StoogeSort probably isn't, and ShuffleSort definitely is not. RadixSort or CountingSort will be faster but require a specific type of data. MergeSort and HeapSort definitely are. QuickSort will be in both the best and average cases. InsertionSort will be faster if running on already sorted data, but will be slower in all other cases. FTP give the order of this asymptotic notation, which is coincidentally the lower bound on a sorting algorithm on an unknown data set.

ANSWER: $O(n \log n)$ [accept "order n log n" or "big o of n log n"]

Philip José Farmer wrote the novel *Venus On the Half-Shell* under his name, as this man had purportedly written a story with that title. Norman Mushari read one of his stories (and was disappointed that it wasn't as pornographic as the magazine it was featured in) while investigating his biggest fan, Eliot Rosewater. Rosewater once hired him to speak at a convention, where Dwayne Hoover bit off his pinky, and also introduced his work to Billy Pilgrim in a mental hospital. FTP, name this recurring Kurt Vonnegut character.

ANSWER: Kilgore Trout

The section dedicated to the composer's fiancée, Ernestina, is adjacent to the one written for his eventual wife, and both contain a four-note motif spelling out the fiancée's hometown and part of the composer's name. Variations on that motif are also in the "Eusebius" and "Florestan" sections, representing the composer's frivolous and melancholy sides, and also in the sections for his contemporaries, Paganini and Chopin. FTP, name this Schumann piano suite.

ANSWER: Carnaval

His best-known tomb is decidedly un-Christian, portraying death as a final march into a dark pyramid and not as an entrance to a new life. That tomb was based on a tomb he originally planned for Titian, although the eventual patron, the Archduchess Maria Christina, didn't seem to mind. He is probably better known, however, for his full-length sculptural portraits, including one of *Paolina Borghese as Venus Victorious*. FTP name this sculptor of *Cupid and Psyche*.

ANSWER: Antonio Canova

Unlike most other board games, black moves first. Like bidding in bridge, the game ends when both players "pass," indicating that neither can improve his or her position. Unlike checkers, where material is valued, pieces are worthless but the area that they control will contribute to a player's final score. Unlike chess, it is not necessary to call "Atari" when one is threatening to take an opponent's stone or stones.

FTP, name this ancient Oriental game.

ANSWER: Go

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Bonuses

1. 30-20-10, name the theatrical character.

30: Her husband, the Duke of Cornwall, is mortally wounded in Act III, Scene 7 by Servant 1, whom she subsequently kills.

20: She has an affair in France with the man her elder sister wanted to marry. In Act V, Scene III, that man is killed by his half-brother, and her sister poisons her and kills herself.

10: Following Goneril, she hyperbolically expresses her love of her father in Act I, Scene I, claiming to be an enemy of all joys other than her father's love.

ANSWER: Regan from *King Lear*

2. Answer these questions about Slavic mythology for ten points, or five points with a classical music clue.

a. (10) This female ghost or succubus-like demon that inhabits lakes has fiery green eyes and kills the men she seduces.

(5) It is the main character of a Dvorak opera.

Answer: Rusalka

b. (10) A witch who lives in a log cabin on chicken legs and flies in a mortar, using the pestle as a rudder.

(5) She shows up in one of the movements of Mussorgsky's *Pictures at an Exhibition*.

Answer: Baba Yaga

c. (10) This creature, with brilliant plumage, saves Prince Ivan by making his enemies dance themselves to sleep.

(5) It appears in a Stravinsky ballet.

Answer: Zhar Ptitsa or The Firebird

3. Consider a market in which producers have a marginal cost of zero for each unit produced. This market faces linear demand function " $P = 2 - Q$." FTSNOP:

a) (5) Assume the market is perfectly competitive. What will the firms charge?

ANSWER: 0

b) (10) Continue to assume the market is perfectly competitive. What is social welfare?

ANSWER: \$2

c) (5) Now assume that the market is a monopoly. What price will the profit-maximizing monopolist charge?

ANSWER: \$1

d) (10): Continue to assume that the market is still a monopoly. What will the social welfare be?

ANSWER: \$1.50

4. Name the Broadway musical, given lyrics from one of its songs, FTPE, or FFPE if you need the song title.

a) (10) "Grab your dick/ And double-click"

(5) "The Internet Is for Porn"

ANSWER: Avenue Q

b) (10) "I was perfect. I had everything but beauty. I had power. And a daughter like a flower. In a tower."

(5) "Ever After"

ANSWER: Into the Woods

c) (10) "I dreamed last night I got on the boat to heaven/ And by some chance I had brought my dice along"

(5) "Sit Down, You're Rockin' the Boat"

ANSWER: Guys and Dolls

5. For fifteen points each, identify the following works of ancient Roman literature from their first lines in Latin. Ten points for each in English, 5 points if you need a plot summary.

(15) Arma virumque cano, Troiae qui primus ab oris Italianam fato profugis Laviniaque venit litora.

(10) I sing of arms and the man, a fugitive by fate, who from Troy first came to Italy and the Lavinian shores.

(5) This is about Aeneas' journey from Troy to Italy.

ANSWER: The Aeneid

(15) Annum agens sextum decimum patrem amisti sequentibus consulibus flame destinatus dimissa Cossutia.

(10) In the course of his sixteenth year he lost his father; in the next consulship, having previously been nominated priest of Jupiter, he broke his engagement with Cossutia.

(5) This is the first of the biographies of Roman Emperors by Suetonius. Name either the series of the emperor.

ANSWER: The Twelve Caesars OR Da Vita Caesarum or Lives of the Caesars OR Divus Julius OR Divine Julius or The Life of Julius Caesar

6. Name the following 20th-century men who formed political parties in the Middle East.

a) This Syrian Christian and Marxist quack founded the Ba'ath party with Salah al-Din al-Bitar during their days as students in Paris in the 1930s.

ANSWER: Michel Aflaq (get it? Quack? Nah, forget it.)

b) This Iranian helped to form the National Front party against foreign control of the oil industry, and served as prime minister from 1951-1953 before being overthrown by pro-shah forces.

ANSWER: Mohammed Mossadiq

c) A leader of the militant Zionist movement Irgun, he founded the conservative Herut party in 1948, which would become the dominating faction of the Likud coalition and would later participate in a crazy, ménage-a-trois handshake.

ANSWER: Menachem Begin

7. Plants don't only look different than us but are different than us on the cellular level. FTSNOP, answer these questions about plant physiology.

a. (5) Occupying up to 90% of the volume of some cells, this organelle is used to store solutes and regulate water balance.

Answer: Vacuole or Tonoplast

b. (10) Plants produce this class of secondary metabolites, containing pharmacologically active compounds such as atropine and nicotine.

Answer: Alkaloids

c. (15) This specialized type of peroxisome is found in oil-rich storage tissue and serves to initiate the conversion of fatty acids to sucrose.

Answer: Glyoxysome

8. As of about midnight on November 2, there was an electoral college outcome that could have created a 269-269 tie and sent the 2004 presidential selection to the house of representatives. 5-10-15-

a) Since Ohio was so important, exactly how many electoral votes does it have?

ANSWER: **20**

b) Of the other swing states, which has the most electoral clout? Your choices are New Mexico, Nevada, Wisconsin, and Iowa.

ANSWER: **Wisconsin**

c) Once again, consider that situation after 45 states and the District of Columbia had been called. There is only one scenario by which Kerry could have exactly tied Bush. Which state or states, if any, would Bush win under that scenario? Your choices are Ohio, New Mexico, Nevada, Wisconsin, and Iowa.

ANSWER: **Ohio**

9. For 10 points each, identify the following things related to a famous event in European history.

a) The northward advance of the Ottoman Empire under Grand Vizier Kara Mustafa was halted in 1683 at the walls of this city.

ANSWER: **Vienna**

b) This Polish king played a large role in leading the soldiers who repelled the Ottomans in a battle on September 12.

ANSWER: **John (Jan) III Sobieski** or **Jan Sobieski**

c) These rich, flaky bread rolls were created to celebrate the European victory at Vienna.

ANSWER: **croissants** or **crescent** rolls

10. Besides its obvious effect of burning stuff, The 1666 Great Fire of London had many indirect effects, which I'll ask you about FTSNOP.

a. (5) This vector of the contemporary Great Plague had its population substantially reduced thanks to the fire.

Answer: **Rats (Rattus)**

b. (5) This roofing system, highly vulnerable to burnination, was not used in London until the new Globe Theatre was built in 1997.

Answer: **Thatched** roof

c. (5) Christopher Wren was given the opportunity to rebuild this cathedral on Lundgate Hill in English Renaissance style.

Answer: **St. Paul's** Cathedral

d. The fire destroyed the medieval cathedral and also the mismatched neo-classical porch attached to it, constructed by this Palladio-loving English architect.

Answer: Inigo **Jones**

11. Given the equation that describes some eponymous physical phenomenon, give the namesake scientist FTPE.

a) $F = q(E + v \times B)$ [F equals q times the quantity E plus v cross B]

ANSWER: Hendrik **Lorentz**

b) $\lambda' - \lambda = h/(m_e c) (1 - \cos \theta)$ [λ prime minus λ not equals h divided by the mass of an electron times c times the quantity 1 minus cosine theta]

ANSWER: Arthur Holly **Compton**

c) $f_o = f_s \times ((1 - v/c)/(1 + v/c))^{1/2}$ [f observed equals f source times the square root of the quantity 1 minus v over c divided by the quantity 1 plus v over c]

ANSWER: Christian **Doppler**

12. FTPE, identify the following Greek sculptors from works.

a) *Amazon of Ephesos*, *Doryphoros* a.k.a. *The Spear-bearer*

ANSWER: **Polykleitos**

b) *Aphrodite of Knidos*, *Apollo Svrroctonus*, *Satyr*

ANSWER: **Praxiteles**

c) *Athena Promachos*, *Zeus at Olympia*, *Athena Parthenos*

ANSWER: Phidias

13. FFPE, given a fighter pilot and a movie from the original *Star Wars* trilogy, give the pilot's full call-sign in that movie.

a) Lando Calrissian, in *Return of the Jedi*

ANSWER: Gold Leader

b) Zev Senesca, in *The Empire Strikes Back*

ANSWER: Rogue Two

c) Porkins, in *A New Hope*

ANSWER: Red Six

d) (15 points total) In any order, all of Wedge Antilles's three call-signs from the trilogy

ANSWER: Red Two, Rogue Three, and Red Leader

14. Given a brief description of the main figure or figures in a work identify the work, FTPE.

a) The elderly woman in the center sits holding a basket. The woman to her right is nursing and the boy to her left is sleeping in this Honore Daumier painting.

ANSWER: The Third Class Carriage

b) In this biblical Rembrandt work, a figure in red points a spear at the central figure, who is being restrained while a man in armor blinds him.

ANSWER: The Blinding of Samson

c) A woman is seen dancing to the right of this gilded bronze Donatello sculpture, while the titular figure recoils on the left as a man kneels in front of him.

ANSWER: The Feast of Herod

15. Answer the following concerning the works of Ernst Theodor Amadeus Hoffman for ten points each.

A. This E.T.A. Hoffman story concerning a life-size animated doll was adapted by Leo Delibes in 1870 to make one of the earliest modern ballets.

Answer: Coppelia

B. This novel by Hoffman is the purported autobiography of a cat, with a biography of one of his most famous characters, the conductor Johannes Kreisler, thrown in.

Answer: *The Life and Opinions of* Kater Murr or *Lebens-Ansichten des* Kater Murr

C. This group of Russian writers including Ivanov and Zamyatin was named for a group of younger writers in a Hoffman collection exchanging stories in the presence of their hermit mentor.

Answer: The Serapion Brothers or Serapio Brethren

16. 10-10-5-5, given an architect, name the city for which he designed a Guggenheim museum.

a) Rem Koolhaas

ANSWER: Las Vegas, Nevada

b) Richard Gluckman

ANSWER: Berlin, Germany

c) Frank Lloyd Wright

ANSWER: New York City, New York

d) Frank Gehry

ANSWER: Bilbao, Spain

17. FTSNOP, classify the given numbers as integer, rational, algebraic, or transcendental, giving the most restrictive identification. For example, 4/5 should be called rational, not algebraic.

a. (5) pi

Answer: Transcendental

b. (10) $e^{(i \cdot \pi)}$

Answer: Integer

c. (5) square root of two

Answer: **Algebraic**

d. (10) $e^{\sqrt{2}}$

Answer: **Transcendental**

18. Given the phoneme in Standard American English, state whether it has features “+voiced” [read “plus voiced”], “+back” [read “plus back”], both, or neither, FFPE, with a five-point bonus for correctly answering all five.

a) p

ANSWER: **neither**

b) k

ANSWER: **+back**

c) g

ANSWER: **both**

d) i [read “little i”]

A: **+voiced**

e) schwa

ANSWER: **both**

19. Answer the following concerning the circles of Hell in Dante’s *Inferno*.

A. For ten points, these guilty lovers are in the 2nd circle of Hell, blown about lightly by stormy winds.

Answer: **Paolo** Malatesta and **Francesca** da Rimini

B. The fiery torments of circle 6, where heretics reside are the outskirts of this fiery “city.”

Answer: City of **Dis**

C. Five for two, 10 for three, what three men are perpetually chewed by Satan in the 9th circle?

ANSWER: **Brutus**, **Cassius**, **Judas**

20. Cronus had six children. FFPE, name them.

ANSWER: **Poseidon**, **Hades**, **Hera**, **Hestia**, **Demeter**, and **Zeus**

30-20-10 Identify this property that applies only to certain particles

30: It is responsible for ferromagnetism.

20: It explains the force that keeps white dwarf and neutron stars from collapsing further.

10: It requires that no two electrons have the same set of quantum numbers.

ANSWER: **Pauli Exclusion** Principle

Answer the following questions about an Alexandre Dumas novel about a man formerly known as Edmond Dantes, FTSNOP.

a) Which of Dantes's enemies shoots himself at the end of the novel after his wife Mercedes leaves him for Edmond?

ANSWER: **Fernand** [accept Viscount **Morcef**]

b) Which of Dantes's enemies, a former prosecutor, ends up mad?

ANSWER: **Villefort**

c) Which of Dantes's enemies does he spare but leave broken and penniless?

ANSWER: **Danglas**

Famous people often say famous things right before they die. For the stated number of points identify the famous leader from his famous last words.

a) (5) "Strike the tent."

ANSWER: General Robert E. Lee

b) (10) "The Earth is suffocating. . .Swear to make them cut me open, so that I won't be buried alive."

ANSWER: Frederic Chopin

c) (5) "Bugger Bognor."

ANSWER: King George V of Great Britain

d) (10) "Turn up the lights —I don't want to go home in the dark."

ANSWER: William Sydeny Porter (Accept O. Henry)

Given an element, give the valence electron configuration for fifteen points each.

a) Chromium

$3d^5 4s^1$

b) Palladium

$4d^{10}$

Given descriptions of sexual acts from *100 Years of Solitude*, state whether they apply to a character named José Arcadio, Aureliano, neither, or both, FTPE.

a) Has sex with Pilar Ternera, resulting in a child

ANSWER: Both

b) Has sex with a woman married to someone other than himself, resulting in a child

ANSWER: Aureliano

c) Has incestuous sex, resulting in a child

ANSWER: Both

FTPE, what are the theological virtues espoused by St. Paul, as listed in Corinthians 1, Chapter 13?

ANSWER: Faith, hope, love (accept charity)

2.