

Technophobia VIII

Round Ten

Caltech

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November 10, 2003

1 Caltech Tossups, Round Ten

1. Geminus, the most famous one, was on the north side of Rome's forum. When Rome was at war it was opened, and when it was closed, Rome was at peace. According to Livy, the austere rectangular bronze structure with doors on either side was closed only twice between Octavian and Numa Pompilius. Particular attention was paid to how legions would march through them on the start of a campaign or returning from one because of the numerous bad omens that could transpire. For ten points, identify these ceremonial gateways named after the Roman God of beginnings and ends whose name is attached to the first month.

Answer: Janus, plural: Jani

2. It circles around Betelgeuse [beetlejuice] at a distance equivalent to thirty times the space between the Sun and Earth, receiving a comparable amount of radiation. Its cities have large white houses and wide streets. The world is unified under a single government, headed by a triumvirate which selects a member from each house of the parliament. The three parliamentary houses are divided between the three races of the planet, which although possessing equal rights self-segregate into military and management, law and religion, or research and writing. Its stock exchange is equipped with ropes, ladders, and trapezes that allow the traders to fill the entire volume of the building. For ten points, identify this planet visited by Ulysse Mérou in a book by Pierre Boulle.

Answer: Le planète des signes

Accept Planet of the Apes

3. After determining the charge of an electron, Millikan determine the value of this constant. The created a spinning wheel bombarded by monochromatic light. The energy of the photon, the activation energy of the metal, and the frequency of the light are known, and Einstein's formulation of the relationship can be applied to solve for the unknown variable. For ten points, what did Millikan estimate to be six point five seven times ten to the minus twenty-seventh erg-seconds, symbolized by a lower-case h ?

Answer: Planck's Constant

Prompt on Dirac's constant

4. After his tomb was opened in 1861, it was learned that he was six feet and $3\frac{1}{2}$ inches tall, making contemporary accounts of him as a giant understandable. To show off his stature, he often demanded that visitors to his octagonal court accompany him to the baths. One of his first memories is translating — with divine assistance — the relics of St. Germain. According to his biographer Einhard, he also showed his appreciation, to the pope by presenting Leo III with a fifty pound necklace, although his heir Louis is generally considered more pious than he. For ten points, identify this Carolingian monarch crowned the emperor of the Holy Roman Empire on Christmas Day, 800.

Answer: Charlemagne

Prompt on "Charles the Great"

5. Von Bismark, the gifted and experienced commander of the 21st division was killed by a mortar blast, and the Italians were making slow progress. Despite the attacking General's infamous *Fingerspitzengefühl* [feeng-EHR-spit-zen-GAH-fool], he followed the advice of Bayerlein and pressed forward to take Alam Halfa, which was defended by the British 44th. The sinking of a tanker off of the nearby port of Tobruk, taken earlier by the Germans, caused severe fuel shortages and forced the Africa Korps to withdraw from Montgomery's lines. For ten points, identify this North African battle of World War II that saw the tide turn against Rommel.

Answer: Second Battle of El Alamein

6. Although he had great pride in his more serious works, such as *Gretchen* and *Broken Hearts*, this dramatist and poet was better known for his lighter works. These included such light verse as *The Bishop of Rum-Ti-Fo* and *The Fairy Curate*, which were collected with his other comic poems as *The Bab Ballads*. He is best known, however, as the librettist of such light operas as *Utopia, Limited*, *Patience*, and *Yeomen of the Guard*. Which collaborator with Sir Arthur Sullivan is famed for his deep love of "topsyturvydom?"

Answer: William S. Gilbert

7. They are easily identified in pathology because they have an affinity for Congo red dye, but they cannot be easily categorized because they have no general conformation, structure, or formula. The infamous beta form is made by cleaving it from APP, a precursor. Diseases occur when these fibrous tangled-up bundles aggregate into plaques and damage tissue. For ten points, what is this group of protein formations linked to Alzheimer's Disease?

Answer: Amyloid

Prompt on early beta-amyloid; do not accept Amyloid Precursor Protein

8. Leon Wilmore has to take a second job here after Assemblyman Zellman finds out that Officer Wilmore gave Tony Soprano a ticket. The mobster buys a pagoda and offers the cop, now shorn of the ability to work overtime, an extra \$300 bucks if the pagoda gets to his house in one piece. The band that took their name from this fine establishment first found its way into the limelight by writing the title track of *That Thing You Do*, and is now has released two more albums after their self-titled debut: Welcome Interstate Managers and Utopia Parkway. For ten points, name this band whose songs include *Stacy's Mom* and *Leave the Biker* named for a New Jersey yard ornament outlet.

Answer: Fountains of Wayne

9. It is open whether this is solveable for machines with four states, but it is not for those with five states since it includes Collatz class functions. For four states or fewer, however, it is solveable. The general problem, however, assumes infinite memory capacity, so in actuality, one could enumerate all possible states reachable by the program and determine if there is a reachable cycle of states that could allow the program to run indefinitely. First proved unsolveable in the general case by Turing in 1937, for ten points, what is this problem of determining if an algorithm will eventually stop?

Answer: Halting problem

Accept Entscheidungsproblem

10. It was so popular in its 1786 premiere that Joseph II decreed that encores could only be performed for arias. Its story takes place over a thirty-six hour period. The composer replaced the sonata-structured arias used in *Idomeneo* with more flexible, irregular arias, such as *Non so più cosa son*, or *I no longer know what I am*, where Cherubino admits that he is enamored with every woman in the castle including the Countess. For ten points, identify this story of a love pentagon that also involves Susanna, the Count, and the titular barber, an opera by Mozart.

Answer: Le Nozze di Figaro

Accept The Marriage of Figaro or Die Hochzeit des Figaro

11. He described a new mathematical tool, he presents a merchant wishing to add the day's receipts. The most straightforward approach would be to add the amounts in the order in which they came. But a better approach would be to tally the number of coins of each denominations. Early critics of his approach questioned the need to define the area of irregular surfaces. In rebuttal, he pulled a crumpled napkin out of his pocket. Identify this French mathematician who developed a generalized method of integration that approaches an integral as dividing the surface to be integrated as the sum of all the values of a function times the measure of the set where the function attains the value and that is — for ten points — an alternative to Riemannian integration.

Answer: Henri Lebesgue [lah-BEG] Integration

12. He is born with an unlucky sneeze and a sixth finger, which gets him the blame for his father's death. An orphan, he is shuttled around to various relatives' homes and gets a job as a sign painter until he stumbles into a marriage that seals his fate with the Tulsi family. He resents their opulence, organization, and oppressive matriarchy, but nevertheless depends on them for his material existence until he finds economic and intellectual freedom in writing for the *Sentinel*. His captive state in the "Hanuman House" is seen as a parallel to the colonial experience. For ten points, identify this character created by V.S. Naipaul who never had a home of his own.

Answer: Mohun Biswas

From *A House for Mr. Biswas*

13. A renegade from Gaia, he escaped from Kalagan and took on the identity of Magnifico Giganticus. He was then taken to Terminus by Ebling Mis where he used his mastery of the Visi-Sonor to destroy the defender's morale. After reaching Terminus, he determined the location of the Second Foundation, but Bayta Darell had determined that he was was not the court jester but instead the overlord bent on rebuilding a Galactic Empire. Identify this mind-controlling warlord created by Asimov bested by the Second Foundation who was — for ten points — named for not only his stubbornness but also his infertility.

Answer: The Mule

Prompt on Magnifico Giganticus before it's said

14. Two answers required. These provinces have large amounts of Potassium, and a fertilizer bearing the name of one of these provinces is sold by Tinfos. These two provinces also contain high amounts for "minette" iron ores which are rich in phosphorous. Before 1878's development of the Gilchrist-Thomas process to handle such ores, they were worthless but became the heart of a booming steel industry afterward, which was an unexpected outcome of the 1871 Treaty of Frankfurt. For ten points, identify these provinces returned to France after Germany's World War I defeat.

Answer: Alsace and Lorraine

15. From this city is Rusty Nails, a children's christian entertainer who inspired the alter ego of Rory B. Bellows. It has streets named Terwilliger, Kearny, Dolph, Flanders, and Lovejoy. The last of which is named after it's city's founder, who has the same name as Mrs. Glick's deceased brother and member of the Flying Hellfish. Neighboring cities include Burns, Barlow, Monroe, Ranier, and Eugene. For ten points, identify this hometown of Matt Groening [GRAY-neeng] and city a hundred miles north of Springfield, Oregon.

Answer: Portland

Note: Sideshow Bob Terwilliger, Kearny and Dolph are friends of Nelson Muntz, Flanders and Lovejoy are local Godheads, Ranier is the fitness guru and moviestar's first name, and Eugene was the name of Simpson's assistant turned supervisor from the first season

16. The addition of peroxides with light heat will reverse this in certain organic reactions. Usually this effect is caused by some combination of steric effects, carbocation stability, and/or radical stability. The possibility of carbocation and radical rearrangement should be eliminated when possible to give the maximum amount of it. The Wittig reaction is famously good at ensuring it. FTP what is this characteristic of a reaction that chooses the same area of a molecule every time it occurs?

Answer: Regioselectivity

17. Highlights include the three "Spring" sisters, the mending of a peacock-feather cloak, a mirror with a skeleton, and burning handkerchiefs that had poetry written on them. The male lead is a not-very-masculine womanizer, and the female lead is a weepy poet, who dies of tuberculosis quite a bit before the book finishes. Both main characters have "Jade" in their names, which is appropriate enough for a Chinese novel, and is significant of their intertwined destiny. Despite soap-operatic tragedy, the story ends somewhat happily since Bao-yuu's wife is pregnant and he passed his exams. The novel focuses on the Jia, Xue, Shi, and Wang families as they go from wealth and power into bankruptcy. For ten points name this Chinese novel, mostly written by Cao Xueqin and finished by Gao E [yee-EEE].

Answer: A Dream of the Red Chamber

Accept A Dream of Red Mansions / Story of the Stone / Hung Lou Meng / Shi Tou Chuan

18. According to an old ballad, Sir Patrick Spens supposedly died on a journey to fetch this child. She was a Norwegian Princess, the daughter of Eric II of Norway and granddaughter of Alexander III of Scotland, this little girl was technically ruler of Scotland from 1286 to 1290, except she never set foot there. Engaged to marry the son of Edward I, in 1290 she was to travel to Scotland to be crowned. Three things went wrong: there was a storm, the ship sank in the Orkney Islands, and she died, either by drowning or from illness afterwards. For ten points, name this girl, once called the "Damsel of Scotland," or more famously, the "Maid of Norway."

Answer: Margaret

Prompt on "Damsel of Scotland" or "Maid of Norway"

19. Originally drafted after Daryl Strawberry by the Mets in the first round of the 1980 draft, he had a slow rise to the majors and debuted in 1984. After several unhappy seasons with the Mets, Tigers, and A's, he quit the team in 1990 and asked to become an advanced scout. His unorthodox methods as a baseball executive for his cash-strapped but successful team are described in Michael Lewis's *Moneyball*. For ten points, name this Oakland A's general manager.

Answer: Billy Beane

20. In addition to being rapacious in his business dealings, this man is said to have inspired the invention of the potato chip. The Dutch refuse to recognize the Americanized version of his surname, splitting it into three properly separate parts. He is entombed on Staten Island, New York, where he started his career by rapidly transporting goods across Nicaragua. For ten points, name this man, whose naval nickname now graces the sports teams of the Nashville University he founded.

Answer: Cornelius Vanderbilt

2 Caltech Bonuses, Round Ten

1. Do you find Berber carpet revolting? It turns out there's a good historical foundation for that ...
 - (a) What Shi'ite dynasty/movement, named for a daughter of Mohammed, was founded by Berbers in 910 in opposition to Arab rule?
Answer: Fatimid
 - (b) The Fatimids wanted to oust this caliphate, the successor to the Umayyads.
Answer: Abbasid
 - (c) Abu 'Abd fostered dissent and revolt among what Berber residents of Ifriqiyah [eff-REEK-ee-yah] against the Aghlabid?
Answer: Kutama
2. Given a list of characters, identify the play by Eugene O'Neil.
 - (a) Ephraim Cabot, his sons Simeon, Peter, and Eben, and Abbie Putnam
Answer: Desire Under the Elms
 - (b) Charles Marsden, Professor Henry Leeds, Edmund Darrell, and Madeline Arnold
Answer: Strange Interlude
 - (c) Larry Shade, Dom Parrit, and Harry Hope.
Answer: The Iceman Cometh
3. Are you a math "ho?" Answer the following questions about topology terms that begin with "ho" for ten points each.
 - (a) It is a continuous transformation from one function to another that is a path in the mapping space between the spaces of the two functions.
Answer: Homotopy
 - (b) Although Poincaré used the term differently, this type of group refers to an Abelian group which partially counts the number of holes in a topological space. In biology, it refers to genetically related adaptations found in different species used for the same general purpose.
Answer: Homology
Accept homologous
 - (c) This is an equivalence relation between topological spaces which is continuous in both directions, also called a continuous transformation. Topology is considered to be the study of geometrical figures up to this.
Answer: Homeomorphism
4. Answer the following questions about a peace treaty that didn't last very long for ten points each.
 - (a) What 1802 treaty between France and essentially the rest of Europe served to separate the French Revolutionary Wars with the Napoleonic wars?
Answer: Treaty of Amiens
 - (b) France and her allies regained much of her colonial territories despite Britain's victories, but Britain maintained two important conquests. Name either of the conquests Britain kept, an Asian colony of the Netherlands or a South American colony of Spain.
Answer: Ceylon (accept Sri Lanka) or Trinidad
 - (c) The peace ended when Britain refused to restore what Mediterranean island to Knights of St. John?
Answer: Malta

5. Identify these Russian statesmen whose names have taken on additional meaning.
- (a) A lover of Catherine the Great, he was charged with conducting the Turkish War and subsequently colonizing Ukraine. For his efforts against the heathens, he was made a Prince Reichsfürst of Austria in 1776.
Answer: Grigory Aleksandrovich Potemkin
Prompt on Prince Knyaz "Tavrichesky"
 - (b) He built and operated the first ships for Peter the Great's navy, and owned almost all of Siberia. A member of one of Russia's greatest families, he was answerable to only to the Tsar.
Answer: Grigory Dmitriyevich Stroganov
 - (c) He replaced Maksim Litvinov, who was not as cozy with Stalin, and served on the State Defense Committee, where he helped supply partisans with cheap war materiel.
Answer: Vyacheslav Mikhaylovich Molotov
6. Identify the following TV characters who are never seen for the stated number of points.
- (a) For five, he communicates with Sabrina Duncan, Jill Munroe, and Jaclyn Smith only via a speakerphone.
Answer: Charlie Townsend
 - (b) For another five, this huge rabbit is the friend of Elwood P. Dowd.
Answer: Harvey
 - (c) For ten, this star of his namesake show has a team of writers including 'Buddy' Sorrell, Sally Rogers, and Rob Petrie [PET-tree].
Answer: Alan Brady
Accept either name
 - (d) For a final ten points, this ex-wife of Dr. Niles Crane is so thin and pale that she manages to hide behind coat racks on NBC's Frasier.
Answer: Marice [MARE-iss] Crane
7. Given an Emperor of China, identify to which dynasty he belonged for ten points each.
- (a) Guang Wu Di
Answer: Later Han
 - (b) Shih Huang-ti
Answer: Chi'in
Don't accept Chi'ing
 - (c) Chu Yan-chang, later known as Hung Wu
Answer: Ming
8. Answer the following questions about a "law" of economics.
- (a) What law says that goods cannot remain unsold over a long term because the production of goods will motivate producers to buy other goods. Or in an oversimplified form, "supply creates its own demand."
Answer: Jean Baptiste Say's Law
 - (b) One of Say's harshest critics was this economist who said that oversupply or undersupply lead to an economic crisis, a view he framed in demographic terms.
Answer: Thomas Malthus

- (c) What law, useful in macroeconomics, is less contentious than Say's law states that if a market has $n - 1$ of n markets in equilibrium, then the n^{th} market is also in equilibrium.

Answer: Leon Walrus's Law

9. Given a national capital, name the next nation you would first encounter by traveling due west from the city on a 5-10-20-30 point basis.

- (a) Dhaka

Answer: India

- (b) Sucre

Answer: Chile

- (c) Vilnius

Answer: Russia

- (d) Washington D.C., not counting international waters as a "nation."

Answer: Japan

10. Impressionist music for ten points each.

- (a) This composer wrote *L'Isle joyeuse* and Suite Bergamasque.

Answer: Claude Debussy

- (b) Debussy also composed this piece, about a mythical creature who was half man and half goat and who spent his time either playing pipes or in hedonistic pleasures of wine and women.

Answer: Prelude to the Afternoon of a Faun

Accept Prélude à l'après-midi dun faune

- (c) Through his life, Debussy wanted to set what Poe work to music, but never completed the work?

Answer: The Fall of the House of Usher

11. Answer the following questions about fictional cereals from cartoon shows.

- (a) Voiced by Frank Zappa, this personification of a Preemo's cereal is a misguided superhero who is powered by Vitamin F and shoots cinnamon out of most of his orifices and the delight of Ren and Stimpy.

Answer: Powdered Toast Man

- (b) For five points each, name the cereals with promoted spokescartoons that Fry was going to have to get used to in the thirty-first century.

Answer: Admiral Crunch and Archduke Chocula

- (c) If you're having trouble with regularity, try this high fiber cereal that now comes in a "super" variety with twigs!

Answer: Colon Blow

12. Answer the following related questions about a Greek drama.

- (a) What Colchean was from what the Greeks called the edge of the world, a powerful sorceress, princess of Colchis, granddaughter of Helias, and wife of Jason?

Answer: Medea

- (b) Jason, however, takes another bride — a real Greek — who is the daughter of what character who also appears in the Oedipus trilogy?

Answer: Creon

- (c) For a final ten points, who is the author of the play *Electra*?
Answer: Euripides
13. Part of the Bible's authority relies on its prophecies. Answer the following about events predicted for the stated number of points.
- (a) For five, this Old Testament figure was told that his offspring would be as numerous as the stars in the sky - even though he and his wife Sarai had no children.
Answer: Abram or Abraham
- (b) This Israelite prophet predicted Jesus, saying "unto us a child shall be born."
Answer: Isaiah
- (c) Jesus told this Israelite that he had been sitting under a fig tree before Philip called him.
Answer: Nathanael
14. Political geography from before you were born ... for ten points, name the current nation that was formerly known as
- (a) Northern Rhodesia
Answer: Republic of Zambia
- (b) Southern Bessarabia
Answer: Republica Moldova
- (c) Siam
Answer: THailand
15. Given an opening line of a work by Dickens, give the work on a 5-10-20-30 basis.
- (a) Marley was dead: to begin with. There is no doubt whatever about that.
Answer: A Christmas Carol
- (b) "Now, what I want is, Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life."
Answer: Hard Times
- (c) The kettle began it! Don't tell me what Mrs. Peerybingle said. I know better.
Answer: The Cricket on the Hearth
- (d) My father's family name being Pirrip, and my Christian name Philip, my infant tongue could make of both names nothing longer or more explicit than Pip.
Answer: Great Expectations
16. Visual bonus, identify these Waterhouse paintings inspired by works of literature for ten points each. If you need the author of the literature, you'll only get five.
- (a) William Shakespeare
Answer: Ophelia
- (b) John Keats
Answer: La Belle Dame Sans Merci
- (c) Alfred Tennyson
Answer: The Lady of Shallot
17. Identify the snack food on a 30-20-10-5 basis.

- 30 They were invented by Alexander Lieba of Montgomery, Ohio. They were recalled in Japan because they contained unapproved bio-engineered products.
- 20 Proctor and Gamble only produce them in two places: Tennessee and Belgium. Production was halted briefly in May when a tornado struck Jackson.
- 10 Once you pop their cylindrical cans, you can use them as a WiFi antenna.

Answer: Pringles

18. Let's pretend you are working in an organic chemistry lab and accidentally spill some benzene on your skin. Answer the following questions about what happens next.

- (a) Benzene molecules, being nonpolar, are generally carried to fatty tissue, or into this general location, before going on to the liver.

Answer: Bone marrow

- (b) If the benzene stays there long enough, it can damage DNA, resulting in the acute myeloblastic form of this disease.

Answer: Leukemia

- (c) The above form of leukemia is usually caused by a mutation in one of these primitive cells, which are totipotent.

Answer: Stem cells

19. 30-20-10: name the actress.

30 Daughter of actress/author Sharman MacDonald, she debuted in *A Village Affair* as young Natasha, then appeared in *Innocent Lies* as young Celia.

20 She played Frankie Smith in *The Hole* and Gwyn, daughter of Robin Hood and Maid Marion, in *Princess of Thieves*.

10 She was Sabé [saah - BAY], Amidala's decoy in *The Phantom Menace*. More recently, she played Jules in *Bend it like Beckham* and Elizabeth Swann in *Pirates of the Caribbean*.

Answer: Keira Knightly

20. Answer the following questions about flatulence for the stated number of pointseach.

- (a) For five, this inert constituent gas of flatulence increases in proportion the longer one holds in a fart since it isn't absorbed through the intestinal wall.

Answer: Nitrogen or N₂

- (b) Five points apiece, name any of the three types of galacto-oligosaccharides, which humans and other monogastric animals cannot break down, and are often found in beans.

Answer: verbascose, stachyose, and raffinose

- (c) For ten points, what is the term given to the hive-defense mechanism used by ants and termites where individuals use a build-up of gastric gas to explode.

Answer: autothysis



Figure 1:



Figure 2:



Figure 3: