

Technophobia IX Round 1-7

Caltech
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1 Caltech Tossups, Round 1-7

1. Its symbol is the same as that of the Lie Derivative. Its inverse is known as the Fourier-Mellin Intergral, or the Bromwich Integral. Duhamel's Convolution Principle can be used to carry out its inversion. For 1, it is $1/s$. For t , it is $\frac{1}{s^2}$. For an impulse at $t = 0$, it is 1. For ten points, name this useful mathematical transform, defined as a semi-infinite integral.

Answer: Laplace Transform, do not accept or prompt on Laplacian

2. He was rescued and trained by Hiko Seijuurou (SAY-juu-roh), who gave him a new name. When he was fourteen he joined the Bakumatsu as an assassin for the Choshu, and married his first wife, Yukishiro Tomoe. After he killed her, and after the revolution was through, he took a vow not to kill, got a reverse-blade sword, and spent ten years wandering Japan. For ten points, name this anime and manga title character, a Meiji-era wanderer who eventually comes home to Kamiya Kaoru.

Answer: Rurouni Kenshin or Himura Kenshin or Himura Shinta or Himura Battousai (need both in that case)

3. When added in excess to a ketone, they react to form an acetal protecting group. In the presence of strong bases, they can undergo the Williamson synthesis. Strong acids and high temperatures can reduce them into alkenes, but substitution is very difficult. They can be oxidized into ketone, aldehydes, and carboxylic acids. For ten points, give the term for an organic molecule having a carbon attached to a hydroxyl group.

Answer: Alcohols

4. It was held by Genoa until 1768 until Pasquale Paoli helped win its independence, only to have the region fall to another power. Monte Cinto is its highest point, and it's capital, Aiacciu, has a history of unrest and criminal activity. Name this French island whose native language is *Corsu* and was, for ten points, the birthplace of Napoleon.

Answer: Corsica

5. His first major work came in three parts: "Of the understanding", "Of the Passions", and "Of Morals". He pointed out problems with free will vs indeterminism, claimed that causes and effects are not real or knowable, and that reason does not affect behavior or morality. He also argued against miracles and the design argument. He raised the "is-ought" problem of ethics in his *Treatise on Human Nature*. For ten points, name this Scottish philosopher, author of *An Enquiry Concerning Human Understanding*.

Answer: David Hume

6. Its rules were created by Tom Gompf in the 1990s, who championed for its inclusion in the 2000 olympics. Its most recent champions include Jing Jing Guo, Min Xia Wu, Li Shi Lao, and Ting Li. Consisting of four events, two for each gender, separate scores reflect the individual and the combined team outcome. Possible performance types include forward, backward, reverse, inward, twisting, armstand, straight, free, tuck, and pike. For ten points, name this sport wherein two people of the same gender jump into the pool.

Answer: Synchronized Diving

7. Sometimes attributed to Jean de Gerson and Gerard Groote, this originally anonymous work comes in four books. Because it focuses on the sayings of St. Augustine and St. Bernard, the author was probably Brotherhood of the Common Life, a part of the Windesheim mystical

movement. The probable author, the chronicler of Agnetenberg, and his brother were both adherents and, like this 1418 work, extolled meditation and total seclusion from the world. For ten points, name this short but popular devotional book, almost certainly authored by Thomas a Kempis.

Answer: The Imitation of Christ or Imitatio Christi

8. Give the common name. The book written by Lutz Windisch in the film *Rossini*. A Gilmore Girl played by Lauren Graham. One of the Elite Four who trains ice-type Pokemon. All of these evoke the image of a jilted lover who combs her golden hair with a golden comb and dives into the water, but who evidently got back out to eternally sit on a rock that now bears her name, singing and luring sailors to crash on that rock. For ten points, name this German siren, the subject of a poem by Heinrich Heine.

Answer: Die Lorelei: Die Geschichte einer Hexe

9. Lands whose ownership had not changed since the Treaty of Passau were left unchanged. Free and imperial cities were not covered by it, but Calvinists and Anabaptists in the countryside got the shaft because only Lutherans and Catholics were recognized. Although it allowed people to move between states, it compelled citizens to practice the religion of their prince. A compromise on all sides, Charles V acquiesced to this 1555 treaty to preserve the Empire - even if it would not remain Catholic. For ten points, name this treaty that officially tolerated Lutherans signed in a Swabian [SCHVAY - bee - ehn] city.

Answer: Peace of Augsburg

10. He said that he “made his bread by making faces,” and armed with a letter of introduction from John Jay went to Philadelphia on a commission from John Vaughn to paint his most famous subject. He also painted portraits of his contemporaries: Joshua Reynolds, Benjamin West, John Singleton Copley, John Trumbull, Washington Allston. He painted *Moses Recieving the Laws* for George the III, and scenes of everyday life like *The Skater*. For ten points, name this painter best known for his portrait of George Washington, the model of the image on the one dollar bill.

Answer: Gilbert Stuart

11. The melody used in it originally came from the Carter Family’s song *When the World’s on Fire*, which meant that – even had they renewed when they were supposed to – Ludlow Records’ suit for infringement would be moot. Insults in it include “dumb as a doorknob,” “UN pussy,” “pinko-commie,” “Herman Munster,” “Botox,” and “stupid dumbass.” Images used include Heinz ketchup, a grenade thrown at hapless farmers, and lots of dancing. For ten points, name this piece of political satire, featuring Bush and Kerry trading shots to the tune of a Woody Guthrie song, featured on JibJab.

Answer: This Land is Your Land, prompt on “JibJab” before mention

12. Minor characters of this book include The Brain, Nestor 10, Herbie, Stephen Byerley, Gloria, and Robbie. Humorous moments include Speedy singing *Gilbert & Sullivan* tunes, Cutie finding religion, Dave “twiddling his fingers,” and Powell and Donovan’s adventures. More serious events include Herbie lying to everyone so as not to hurt them, the creation of a spaceship capable of making the interstellar jump, and Stephen Byerley’s identity crisis. For ten points, name this book, narrated using interviews of robopsychiatrist Dr. Susan Calvin, written by Isaac Asimov.

Answer: I, Robot

13. This battle saw General Bee and Colonal Bartow die. The losing general attempted, and failed, to attack Matthews Hill and Henry Hill. Though it was a Confederate victory, the troops were too tired to pursue the Union army on its six day retreat to Washington in July 1861. Once there, McDowell was fired and replaced by McClellan, who didn't do much better against the newly christened "Stonewall" Jackson. For ten points, name this Virginia battle, the first major land battle of the Civil War.

Answer: First Bull Run or First Manassas (prompt on partial)

14. Biology labs use 1/4 inch of Lucite to protect against them. Lack of recoil when they are expelled led Wolfgang Pauli to postulate the existence of the neutrino. Their decay is mediated by the weak nuclear force, and Henri Becquerel gets credit for discovering them in 1900. Cesium-137, Iodine-131, Strontium-90, and Cobalt-60 all emit them when decaying. Phosphorous-32 and Tritium also emit them. For ten points, name this form of ionizing radiation, equivalent to electrons.

Answer: Beta particles or radiation, prompt on electrons, leptons, etc.

15. This book's narrator's family is ashamed to have no members on either side of the Battle of Hastings. Memorable events in the book include asking what a whore-lady is, reading books to a morphine-addicted old lady, and finding suspicious chewing gum. Jeremy and Jean Louise are attacked by the sore loser of a trial that their father defended. Bob Ewell "falls on his knife" according to the Sheriff. For ten points, name this Harper Lee novel about Dill, Scout Finch, and Boo Radley.

Answer: To Kill A Mockingbird

16. In 1865 he took the minor Franciscan orders and was made Canon of Albano at about the same time he wrote *Inno del Papa*, which became the *Tu es Petrus* movement of a later oratorio. Taught by Czerny, who showed him off to Beethoven, he himself was an advocate of an exiled Wagner, whose *Lohengrin* he staged at Weimar in 1850. He earned early fame for his *12 Trancedental Etudes* and *La Campanella*. For ten points, name this Hungarian piano virtuoso, composer of *The Faust Symphony*.

Answer: Franz or Ferenc or Franciscus Liszt

17. The grey toe in this poem refers to a gangrenous toe caused by diabetes, which killed the titular figure in real life. The poem harps on Nazi qualities: bright blue eye, Luftwaffe, Panzer-man. The speaker claims to be a Jew. The poem also alludes to a suicide attempt, after which they "pulled me out of the sack" and "stuck me together with glue." Ending with the line, "you bastard, I'm through," this poem conflates the the titular character with Ted Hughes, who abandoned the poet. For ten points, name this semi-autobiographical poem by Sylvia Plath.

Answer: Daddy

18. Podospora anserina uses them to kill off invasive colonies. Most yeast ones are rich in glutamine and asparigine, making them flexible. They have been called "auto-chaperone" proteins, and Prusiner won a Nobel Prize for discovering them. If their conformation whacks out, they cause untreatable neural degeneration by creating amyloid plaques that kill neurons. For ten points, name the particles that transmit kuru, CJD, and mad cow disease, whose name is short for "proteinaceous infectious particle."

Answer: prion, accept "proteinaceous infectious particle." before mention

19. When questioned about "carnal embrace," this work's young protagonist tells her mother about sides of beef. In the present, Hannah Jarvis and Bernard Nightingale are deciphering the lives

of Septimus the tutor, and his pupil Thomasina who is trying to solve Fermat's Last Theorem; they of course fall in love. The night before her seventeenth birthday, he kisses her, they waltz, she drops a candle, and burns to death. For ten points, name this play by Tom Stoppard that shares its name with a city eight miles east of Pasadena.

Answer: Arcadia

20. He painted *Triumph of Romulus over Acron* and *Ossian's Dream* for Napoleon, and won the Prix de Rome in 1801. A champion of classical style, he said paint should be "smooth as the skin of an onion," exemplified in his "Valpincon Bather." He often exaggerated human figures to provide the sensual effects of "The Turkish Bath" or, more famously, "La Grande Odalisque." For ten points, name this teacher of Chasseriau and idol of Degas, abused for painting three extra vertebrae.

Answer: Jean-Auguste-Dominique Ingres

21. While an employee at Hartford Fire Insurance Company, he helped introduce the word "flammable" to replace "inflammable." Also the author of several tracts on gravity while a student at Yale, he came up with a "relativity" theory that helps explain why phrases like "rehpi," can express the idea of nouns in Hopi, a language lacking nouns. For ten points, name the man who, with Edward Sapir, hypothesized that language shapes our thought process.

Answer: Benjamin Lee Whorf

22. Both sides used mercenaries from Europe, like Generals Kundt and Belaieff. However, one side had better native generals, like Jose Felix Estigarribia. Its battles were more decided by digging wells and dying of disease than fighting. The war ended with some 100,000 dead and many more prisoners of war, mostly held by Paraguay, who came out on top in this war fought over a speck of oil found in 1928. For ten points, name this war between Paraguay and Bolivia, fought over a namesake piece of uninhabitable land.

Answer: Gran Chaco War

2 Caltech Bonuses, Round 1-7

1. Answer some questions about a work of literature for ten points each. (*Note to reader: be lenient on pronunciation*)
 - (a) This work's main characters are both named after jade, and though they are linked by fate, they never really get together: one dies of tuberculosis and the other marries someone else.
Answer: Hung Lou Meng or Dream of Red Mansions or The Story of the Stone or Dream of the Red Chamber or close equivalents
 - (b) Name the principle author.
Answer: Tsao Hsueh Chin
 - (c) Name the author who supposedly finished writing it.
Answer: Gao E

2. We all know what opium did to China; now answer some questions about opium and Europe, for ten points each.
 - (a) This is the company that primarily produced and sold opium to China and India.
Answer: British East India Company
 - (b) This was the British ship carrying opium that was attacked, setting off the First Opium war.
Answer: Arrow
 - (c) Not wanting to be left out, in 1858, Muravyov pressed the general I-shan to sign a treaty at Aigun ceding the area north of this river to Russia.
Answer: Amur or Chin Heilong

3. Answer some questions on an opera and related works, for ten points each.
 - (a) This Puccini opera deals with Cio-Cio-San.
Answer: Madame Butterfly
 - (b) Name Cio-Cio-San's suitor and husband.
Answer: B.F. Pinkerton
 - (c) The musical *Miss Saigon* was based on *Madame Butterfly*. Name Pinkerton's counterpart, Kim's husband.
Answer: Chris

4. Given a symbol from quantum mechanics equations, identify what it stands for for ten pointseach.
 - (a) H-bar
Answer: Planck's Constant divided by 2π
 - (b) Capital H
Answer: Hamiltonian Operator
 - (c) Psi
Answer: Wave Function or Wave Equation

5. Identify these inequalities from analysis for ten points each.

(a) For any continuous function f , $|\int_a^b f(s)ds| \leq \int_a^b |f(s)|$.

Answer: Minkowsky's inequality

(b) For a real continuous concave function f , $\frac{\sum f(x_n)}{n} \leq f(\frac{\sum x_n}{n})$.

Answer: Jensen's inequality

(c) On any vector space with inner product $\langle x, y \rangle$, $|\langle x, y \rangle| \leq \|x\| \|y\|$.

Answer: Cauchy-Schwartz Inequality

6. Name some deities from Hindu mythology for ten points each.

(a) He married Sati, who committed suicide and was reborn as Parvati, breaking his meditation.

Answer: Shiva or Siva

(b) One of Shiva's children, some stories recount that he tried to peek at his mother in the bath. Shiva got pissed and cut off his head, but had to replace it to placate Parvati.

Answer: Ganesha or Ganesh or Ganesa

(c) This is the creature that Ganesh somehow manages to ride as a vehicle, or have as a companion.

Answer: Mouse or Mooshika

7. Answer some anthropology questions for ten points each.

(a) The famous "Lucy" is of this Hominid species.

Answer: Australopithecus afarensis

(b) "Lucy" was discovered in this nation.

Answer: federal Democratic Republic of Ethiopia or Ityop'iya Federalawi Demokrasiyawi Ripeblik

(c) This ancient Hominid, whose remains were discovered near Lake Turkana in Kenya, is thought to be about the same age as "Lucy".

Answer: Australopithecus anamensis

8. "Do not bear false testimony against your neighbor." Name, for ten points each, some Biblical women who ignored that commandment.

(a) When she was told that she would bear a child in her old, old age, she laughed in God's face. Later, when Abraham asked why she had mocked God, she said she had not.

Answer: Sarah or Sarai

(b) She stole her household idols, hid them under her seat, then told her father Laban that she was menstruating so he wouldn't touch anything she was sitting on.

Answer: Rachel

(c) Her husband Ananias sold a piece of land, and pretended to give the full amount to the Church. He was struck dead, and when she lied about the money, she too was struck dead.

Answer: Sapphira

9. He didn't take part in Hideyoshi's two Korean campaign. For ten points each, name:
- (a) This man who was thus in a good position to start a shogunate after Hideyoshi's death.
Answer: Tokugawa Ieyasu
 - (b) After 265 years, the Tokugawa was succeeded by this era.
Answer: Meiji
 - (c) After helping the Meiji Revolution, this samurai of the Satsuma-Han became dissatisfied and led the Seinan War, also known as the Satsuma Rebellion.
Answer: Saigo Takamori
10. Answer some questions about Ludwig Wittgenstein for ten points each.
- (a) This 1921 publication tackles the question of how language is possible.
Answer: Tractatus Logico-Philosophicus or Logisch-philosophische Abhandlung
 - (b) Later, he claimed that this concept of a purely internal language that only one person can understand is impossible.
Answer: Private Language or Privatsprachen
 - (c) Published after his death, this work uses the "private language" argument to assert that all belief is an illusion.
Answer: Philosophical Investigations or Philosophische Untersuchungen
11. Identify the following about that plays that put historical figures in odd positions for ten points each.
- (a) This Stoppard play imagines a meeting between Lenin and Joyce in Zurich.
Answer: Travesties
 - (b) This playwright wrote *Picasso at the Lapin Agile* about a similar meeting between Einstein and Picasso in Paris.
Answer: Steve Martin
 - (c) This Dürrenmatt work deals with two secret agents claiming to be Einstein and Newton in order to steal Mörbius' gravitational field theory.
Answer: The Physicists or Die Physiker
12. Name the man on a 30-20-10 basis.
- 30 At one point in his life he was king of Sicily, and wanted his son Helenus on the throne. He was killed by an old woman accidentally throwing a roof tile onto his head.
 - 20 He was king of Epirus at many points in his life, gaining and losing the position. Hannibal said he was the second greatest general in the world, right after Alexander.
 - 10 His most famous battle was the Battle of Ausculum.
Answer: Pyrrhus of Epirus
13. Answer some questions about a Greek play for ten points each.

- (a) In this play, the women of Athens refuse sex to their husbands until they end the war with Sparta.
Answer: Lysistrata
- (b) Give the author of *Lysistrata*
Answer: Aristophanes
- (c) The play has two choruses, each composed of different parts of the population. Name both, for five points each.
Answer: Women, Old Men
14. Answer some questions about a US treaty for ten points each.
- (a) This treaty tried to demilitarize the Great Lakes, and Lake Champlain.
Answer: Rush-Bagot
- (b) The Rush-Bagot treaty was signed in this year.
Answer: 1817
- (c) The Great Lakes were not completely cleared up until this later treaty, which completed the demilitarization.
Answer: Treaty of Washington of 1871
15. Answer some questions on everyone's favorite evil robot, Bender, on a 5-5-10-10 basis.
- (a) Give Bender's favorite word and – topping Dafodil – the robots' most frequently used word, the one needed to trigger a bomb in *War is the H Word*.
Answer: A is for Ass
- (b) Give Bender's major vulnerability, which he shares with another creature and overcame in *Crimes of the Hot*.
Answer: He cannot get up if he falls on his back, accept equivalent
- (c) In the first episode of *Futurama*, Bender tries to commit kill himself because the girders he was bending were being used for these . . . how ironic.
Answer: Suicide Booths
- (d) In *Godfellas*, Bender becomes a god and issues only one commandment. Give it, or paraphrase it if you must.
Answer: God Needs Booze
16. There are multiple ways to reduce a carbonyl group into an alkane. Based upon the conditions and reagents, identify these for ten points each.
- (a) This method uses acidic conditions and zinc amalgam.
Answer: Clemmenson Reduction
- (b) This method uses hydrazine, and is driven by the production of nitrogen gas.
Answer: Wolff-Kishner Reduction
- (c) This method uses the transition metal in its name as a catalyst. It is also basic, but less harsh than Wolff-Kishner.
Answer: Raney-Nickel Reduction

17. Given the best-known attribute of a saint whose name has become attached to an island, name him or her for ten points each.
- (a) The island named for this patron saint of Sweden switched hands between France and England fourteen times.
Answer: Saint Lucia or Saint Lucy
- (b) The British Crown leased this island named for the mother of Constantine the Great from the Dutch East India Company from October 1815 until May 1821.
Answer: St. Flavia Julia Helena Augusta
- (c) This nation with capital at Basseterre is named for a third century martyr killed by Decius.
Answer: St. Kitts or St. Christofer or St. Offero
18. Given an exclave and the nations it borders, identify the owner of the exclave on a 5-10-20-30 basis.
- (a) Nakhchivan Autonomous Republic, bordering Armenia, Turkey, and Iran.
Answer: Azerbaijan
- (b) The Musandam peninsula, bordering the United Arab Emirates.
Answer: Sultanate of Oman or Saltanat Uman
- (c) Kaliningrad, between Poland and Lithuania.
Answer: Russian Federation or Rossiya or Rossiyskaya Federatsiya
- (d) The cities of Ceuta, Llívia, and Melilla, bordering Morocco.
Answer: Kingdom of Spain or Reino de España
19. Given an epic poem, name the love interest of the title character of these poems, for ten points each.
- (a) *The Lady of Shalott*
Answer: Launcelot
- (b) *The Highwayman*
Answer: Bess
- (c) *Evangeline*
Answer: Gabriel Lajeunesse; accept either
20. Answer some questions on traditional Japanese swordsmanship on a 10-5-15 basis.
- (a) This is the general name for the “way of the sword.” Two answers accepted.
Answer: Kendo or Kenjutsu
- (b) Called daisho when paired with a wakizashi, what is this long, curved, and double-edged sword traditionally used by Samurai?
Answer: Katana or to
- (c) This is the name for the art of drawing a sword and killing in the same motion.
Answer: Iaido
21. Answer some questions about a sculptor and his works for the stated number of points.

- (a) (10) This man came up with *Bird in Space*.

Answer: Constantin Brancusi

- (b) (20) Brancusi came up with a sculptural ensemble at Targu Jiu. It has three pieces; name any two for ten points each.

Answer: The Table of Silence, The Kiss Gate, The Endless Column

22. Answer some questions about a personality test for ten points each.

- (a) (10) This test gives you a combination of four characteristics, such as INTJ.

Answer: Myers-Briggs Type Indicator

- (b) (20) There are eight characteristics measured in the Myers-Briggs test. For five points each, name any four.

**Answer: Extraversion, Introversion, Sensing, Intuition, Thinking, Feeling, Judgment, Perception
accept word forms**