

TOSSUPS

1. In one model, this property can be represented by the proximity of two points in 3-dimensional Hansen space. In drug metabolism, glucuronic acid is added to xenobiotic substrates to increase this property. The ratio of values of this quantity in octanol and water gives the (*) partition coefficient. The equilibrium constant for this quantity, which does not have a denominator, is known as its “product.” This quantity decreases via the common-ion effect. For 10 points, name this ability of one substance to dissolve in another.

ANSWER: solubility

2. This country’s Prime Minister promised to veto an application by an independent Scotland to join the EU. The nationalist Citizens party has gained popularity in this country, while economic recovery has prompted the decline of a party whose name translates as “We Can” that became popular opposing (*) austerity measures. This largest country to receive a Troika bailout is home to Europe’s largest bank, Santander Group. Mariano Rajoy is Prime Minister of - for 10 points - what country ruled by Felipe VI after Juan Carlos’ abdication?

ANSWER: (Kingdom of) Spain [or Reino de España]

3. Joseph Dudley authorized monetary compensation for residents of this place. *Clavices purpurea* may have caused an outbreak of ergotism in this place, where George Jacobs was sentenced to death despite his granddaughter Margaret’s withdrawal of her accusations and (*) Goodwife Nurse was hanged on the words of Ann Putnam. A slave named Tituba taught fortune-telling in this town, whose events prompted Increase Mather to warn against “spectral evidence.” For 10 points, name this Massachusetts town, the site of some witch trials.

ANSWER: Salem, Massachusetts

4. Differential ability to perform this action decides the “big man” in the *moka* system analyzed by Marshall Sahlins. Besides warfare and territorial authority, these actions are the main source of *mana* among the Maori. Examples of these actions involving *veigun* and (*) *mwali* follow the “opposite flow” rule. An essay about these actions discusses their spiritually imbued exchange as an example of “total prestation.” The potlatch and kula ring systems are examples of - for 10 points - what kind of action famously studied by Marcel Mauss?

ANSWER: (giving of) gifts [accept anything mentioning gifts; accept *The Gift*; accept charity]

5. In the third movement of this composer’s seventh symphony, the strings are instructed to pluck so hard that they hit the wood in a pizzicato section. A theme played by flutes and sleigh bells opens this composer’s fourth symphony, which concludes with a song about a child’s vision in (*) heaven. His second symphony contains a D-flat major setting of “Urlicht”, a poem drawn from the anonymous folk poem collection *Des Knaben Wunderhorn*. For 10 points, identify this composer of the *Resurrection* and *Titan* symphonies.

ANSWER: Gustav Mahler

6. This author wrote about the foreigner “Yanko Goorall”, who dies of heart failure after his pleas for water go unanswered. In another story by this author, an argument over sugar results in the accidental death of Carlier at the hands of Kayerts. This author of “Amy Foster” and “An Outpost of Progress” also wrote a story set in the (*) Gulf of Siam in which a ship captain shelters the accidental murderer Leggatt. For 10 points, name this author of “The Secret Sharer,” whose longer works include *Lord Jim* and *Heart of Darkness*.

ANSWER: Joseph Conrad [accept Jozef Teodor Konrad Korzeniowski]

7. Students in this polity broke into armories to arm themselves as the Academic Legion, which promised to support the government after an unpopular minister fled to London. A dissident *against* [emphasize] this power organized the Honved army; after exile, he was controversially welcomed by Lord Palmerston and invited to the U.S by (*) Millard Fillmore. Lajos Kossuth [“*LA-yosh KOH-shoot*”] led an uprising against this empire that was put down by the intervention of Russia’s Nicholas I. For 10 points, name this empire home to Congress System creator Klemens von Metternich.

ANSWER: Austrian Empire [or Kaisertum Österreich; accept Vienna until “power” is read]

8. If two objects have equal density, a distance named for this scientist can be calculated to be equal to the square root of 16 times the radius of the larger object. The point at which two roughly teardrop shaped regions named for this scientist touch each other is the inner Lagrangian point. Planetary (*) rings form at a distance named for this scientist beyond which an object's attraction to itself can't hold it together. Some "lobes" in binary systems are named after - for 10 points - what scientist, who names a limit beyond which tidal forces break up orbiting objects?

ANSWER: Édouard Albert Roche

9. This figure and his older brother were conceived when Devaki's womb was impregnated with two strands of hair, one black, and one white. tamed a ten-headed cobra who was polluting the Yamuna river by dancing on its heads. His parents were imprisoned because of a prophecy that their eighth child would kill this figure's uncle (*) Kamsa. He is depicted alongside the gopi Radha and delivers a speech about the importance of duty to Arjuna in the *Bhagavad Gita*. For 10 points, name this avatar of Vishnu, commonly depicted as a young, flute-playing boy.

ANSWER: Krishna [accept "Balarama" if they buzz on the first clue]

10. The last track on this album is a 15-minute series of shoutouts to everyone from Dreamville Records to "everybody in Ferguson still riding," and is titled "Note to Self". The intro track on this album repeatedly asks "do you want to, do you want to be, happy?" The music video for a song off of this album uses the image of dogs biting each others' tails as sexual innuendo. That song has a hook that repeats (*) "I ain't never did this before" and describes how the artist lost his virginity, "Wet Dreamz." For 10 points, name this most recent album by J Cole.

ANSWER: 2014 Forest Hills Drive

11. This character notes, "if I could paint, I'd paint that picture" at the sight of a black child standing by a shack. This character wears a navy blue straw sailor hat, and comments that she "injured an organ" after a cat jumps out from underneath a basket. This character threatens to stop curling (*) June Star's hair. Later, this character attempts to persuade her captor that he's "one of [her] own children!" before being shot three times in the chest. For 10 points, name this elderly woman killed by The Misfit in Flannery O'Connor's story "A Good Man is Hard to Find."

ANSWER: the grandmother from "A Good Man is Hard to Find"

12. A disputed work by this artist was unusually executed on wood panel, and depicts a pale woman in a wide-brimmed red hat staring at the viewer. Blood gushes out of a crushed snake's mouth, and a woman wearing satin garments gazes at a glass sphere suspended from the ceiling, in this artist's *Allegory of* (*) *Faith*. A foot warmer rests on the ground as a woman with rolled-up sleeves pours liquid into a clay pot in this artist's *The Milkmaid*. For 10 points, name this Dutch artist of *Girl with a Pearl Earring*.

ANSWER: Johannes Vermeer

13. A group from this denomination established a communalistic utopia in East Arabia and seized the Black Stone of the Ka'aba for twenty-three years. The Qarmatians belonged to this sect, as did a group who originated the word *fida'i* and briefly held Masyaf castle. A group of this sect that lived at the (*) fortress of Alamut was founded by Hassan-i Sabah; that group called themselves by a name popularly attributed to their drug use, the Assassins. The Nizaris are the largest branch of - for 10 points - what Shi'a sect which included the Seveners?

ANSWER: Isma'ili Islam [or clear equivalents like Isma'ilism; prompt on Shi'a or Shi'ite Islam; accept more specific answers like Seveners or Nizaris]

14. For a sequence of n random values, this quantity for values x_{-1} through n can be calculated as *[read slowly]* this quantity for x_{-1} times this quantity for x_n by Wald's identity. Given variables X and Y , the formula *[read slowly]* "quantity this value for X times Y " minus "quantity this value for X times this value for Y " gives the covariance of X and Y . This quantity is defined as the (*) probability-weighted average of all possible values. The law of large numbers predicts that the mean will converge to - for 10 points - what anticipated long-run average result of an experiment?

ANSWER: expected value [or expectation value; prompt on average; prompt on mean or arithmetic mean]

15. This religion's creator deity was symbolized by the spine of a bovine. People in this religion had three souls, only one of which was immortal and could be transfigured after death. A reformer of this religion ordered an official regicide of old deities and composed the Great Hymn. In this religion, the rolling of (*) dung by beetles

personified by Khepri symbolized the transition of the Sun, which was attacked by a serpent every night. Atenism was a monotheistic variety of - for 10 points - what religion that worshipped deities like Horus and Ra?

ANSWER: (Ancient) Egyptian religion [or equivalents mentioning Egypt; accept Atenism until it is read]

16. This novel's protagonist leads a pair of tethered Persian sheep to a patch of grass for grazing, and eats their mutton several days later at a party hosted by the "dog-man." The protagonist sleeps with a "dumpy little woman" in charge of the Animal Welfare Clinic, and helps her euthanize stray animals. The main character of this novel visits his daughter (*) Lucy after fleeing Cape Town in the wake of an affair with his student Melanie Isaacs. For 10 points, name this novel about the deteriorating life of Professor David Lurie, written by J. M. Coetzee.

ANSWER: Disgrace

17. The first genome-wide association study revealed that risk of this disease is boosted by two common Factor H polymorphisms. Ranibizumab, or Lucentis, treats a rarer form of this disease caused by choroidal neovascularization through Bruch's membrane. Seeing (*) curved lines in the Amsler grid test is a diagnostic for this disease. Excessive buildup of yellow accumulations called drusen can cause its "dry" form. For 10 points, name this disease in which damage to the namesake retinal region causes loss of central vision.

ANSWER: macular degeneration [accept age-related macular degeneration, AMD, or ARMD]

18. This man published an in-depth account of pederastic brothels in Karachi during his service in the army. This man's quest to find an "inland sea" described by Zanzibar traders resulted in his sighting of Tanganyika while travelling with John Speke, with whom he debated the source of the (*) Nile. This man worked with Forster Arbuthnot to publish translations of erotic literature like the *Kama Sutra*. A famous translation of *The Arabian Nights* was made by - for 10 points - what Victorian explorer who performed *hajj* to Mecca in disguise?

ANSWER: Sir Richard (Francis) Burton

19. In *The Blood of a Poet*, the poet splashes through one of these things to visit "The Hotel of Dramatic Follies." A veiled figure in *Mesches of the Afternoon* has one of these things for a face, and in Cocteau's *Orpheus*, they are gateways to the underworld. Maria watches a barn burn in a film *named for one of these* about the dreamlike memories of (*) Alexei by Tarkovsky. Jake recites lines from *On the Waterfront* in front of one in *Raging Bull*, and Travis says "You talkin' to me?" to one in *Taxi Driver*. For 10 points, name these things Wendy uses to read "REDRUM" backwards in *The Shining*.

ANSWER: mirrors

20. This city's leader refused to fight the Persians despite having the largest Greek army at the time because its ruler wasn't offered a command position. Survivors of this city's destruction of Motya founded Lilybaeum. Gelon was a leader of this Greek city, which invented the quinquireme ship. (*) Pyrrhus of Epirus saved this city from a siege; his general Hiero II then took it over and renewed its conflicts with Carthage. Alcibiades promoted a disastrous attempt to take this city during the Peloponnesian War. For 10 points, name this Sicilian city home to Archimedes.

ANSWER: Syracuse [or Siracusa; or Syracusae; or Syrakousai]

21. This school's founder established feelings, preconceptions, and sense-perceptions as three criteria of truth. Philodemus' writings for this school, such as a poem outlining the *tetrapharmakos*, were found in the Villa of the Papyri at Herculaneum. This school's belief that atoms moved independently in a process called (*) *klinamen* or "swerve" was described in *De rerum natura* by Lucretius. Freedom from pain and fear, called *ataraxia* and *aponia*, were the goals of - for 10 points - what school of philosophy associated with pleasure-seeking?

ANSWER: Epicureanism

22. This city's African-descended Sheedi community is centered in Lyari Town. Mohajirs living in this city are the political base of the MQM party. I. I. Chundrigar Road is the financial center of this city, which is linked to Gwadar by the Makran Coastal Highway. The two ports in this city, one of which is Port Qasim, handle (*) 90% of the country's maritime exports. This city, which is the largest in Sindh, was replaced by Rawalpindi and then Islamabad as its country's capital. For 10 points, name this most populous city in Pakistan.

ANSWER: Karachi [or Kolachi]

23. The Beechgard salt is an organic CT complex that behaves like one of these materials. A charge of $2e$ is transferred across the boundary between one of these materials and a normal state material in Andreev reflection. These materials contain Abrikosov vortices with a size close to their (*) coherence length. Depending on their number of critical fields, they can be classified as type I or type II. The magnetic field is expelled during the transition to becoming one of these materials in the Meissner effect. For 10 points, name these materials with no resistance.

ANSWER: superconductors [or superconductivity]

24. In a novel written in this language, a character whose name means “child” nearly commits suicide after the disappearance of a golden spoon. *I Served the King of England* was written in this language, along with a play in which the secretary Maria is fired for translating the constructed language (*) Pysdepe, used to write the title *Memorandum*. Alquist is the only surviving human in another play written in this language that coined the term “robot.” For 10 points, name this language used by Vaclav Havel and the author of *R. U. R.*, Karel Čapek.

ANSWER: Czech language [accept čeština]

BONUSES

1. This family primarily maintained its power through its control of the National Guard, and it originally rose to power through the ouster of Adolfo Díaz. For 10 points each:

[10] Identify this family, three of whose members served as President of Nicaragua during the 20th century.

ANSWER: Somoza family

[10] Anastasio Somoza DeBayle's government was overthrown by a revolution led by a left-wing front that took its name from this man, who was assassinated in 1934 by the forces of Anastasio Somoza García.

ANSWER: Augusto Nicolás Sandinó

[10] In the 1980s, the Sandinistas were opposed mainly by this loose collection of right-wing groups in Nicaragua, who were controversially funded by weapons sales to Iran during the Reagan administration.

ANSWER: Contras [accept Iran-Contra affair]

2. If you're building an app that pulls dynamically updating data from a site like Facebook or Flickr, you might use an open kind of these tools. For 10 points each:

[10] Name this set of protocols that applications use to communicate with each other.

ANSWER: application programming interface [or API]

[10] APIs on the web are often used to send requests using this protocol, the basis for data communication on the web. Its name is usually seen before the colon-slash-slash in URLs.

ANSWER: Hypertext Transfer Protocol [or HTTP]

[10] Oracle sued Google in part for infringing on the structure, sequence, and organization of the API for this object-oriented language with a "write once, run anywhere" design.

ANSWER: Java

3. Angiras and this text's other namesake *rishi* are named as its main compilers. For 10 points each:

[10] Identify this text, which contains lots of weird black magic and other spells designed to assist in romance, statecraft, and longevity. It's also the earliest Sanskrit text on medicine.

ANSWER: Atharvaveda [prompt on Vedas]

[10] The rishi Atharvan, who lends his name to the Atharvaveda, is described as the first to create offerings to this classical element represented by the deity Agni.

ANSWER: fire

[10] The Atharvaveda also contains three of these texts. These Vedic commentaries were favorites of Arthur Schopenhauer and other German philosophers.

ANSWER: Upanishads

4. Cultural competence is a major area in which health care organizations are seeking to improve. For 10 points each:

[10] Anne Fadiman's *The Spirit Catches You and You Fall Down* chronicles the cultural difficulties that a family of this Southeast Asian ethnicity, prominent in Minneapolis, experienced with the California health care system.

ANSWER: Hmong

[10] In 2005, this state began mandating six hours of cultural competence training to renew medical licenses. It recently enacted an ACA Medicaid expansion under governor Chris Christie.

ANSWER: New Jersey

[10] This university runs the National Center for Cultural Competence. A law student at this university was attacked by Rush Limbaugh in 2012 for her advocacy for free contraceptives.

ANSWER: Georgetown University

5. The folk dance *Kamarinskaya* was turned into a piece of orchestral music by this composer. For 10 points each:

[10] Name this composer of the earliest Russian-language opera in the repertoire, *A Life for the Tsar*.

ANSWER: Mikhail Glinka

[10] Vladimir Stasov and Alexander Serov engaged in a debate over the merits of this opera by Glinka, whose overture uses a piano and harp to imitate a *gusli*. This opera's second act contains Farlaf's Rondo.

ANSWER: Ruslan and Lyudmila [or Ruslan i Lyudmila]

[10] Catterino Cavos, a composer born in this modern day country, anticipated Glinka by composing his own *Ivan Susanin* on similar themes. This country was the origin of the *opera buffa* and *opera seria* styles.

ANSWER: Italy [or Italia]

6. This work concludes with its poet's note that, "I will say no more," because "The rest is told without aid of tongue to the heart of him whose spirit is alive." For 10 points each:

[10] Name this lengthy poem divided into six books which opens by instructing its reader to "listen to the reed-flute." It includes such stories as "The Vision of Zayd" and "The King and the Handmaiden."

ANSWER: Spiritual Couplets [accept Masnavi or Masnavi-I Ma'navi]

[10] The *Spiritual Couplets* were written by Rumi in this language. Omar Khayyam used this language to write his *Rubaiyat*.

ANSWER: Persian [accept Farsi]

[10] In the *Rubaiyat*, this two-word phrase represents fate; it “writes, and, having writ, Moves on.”

ANSWER: “**Moving Finger**”

7. Give some facts about the cell cycle, for 10 points each:

[10] This group of conserved serine-threonine kinases binds to a namesake family of partners. They regulate the cell cycle through inhibitory phosphorylation of target substrates.

ANSWER: **cyclin-dependent** kinases [or **CDKs**]

[10] Cyclin E binds Cdk2 to transition from G₁ phase to S phase, where this process occurs. The Meselson-Stahl experiment proved it is semiconservative.

ANSWER: DNA **replication**

[10] One way of distinguishing cells in different phases of the cell cycle uses a propidium iodide stain and this technique. FACS is a type of this technique, which is combined with FISH to measure telomere length.

ANSWER: **flow cytometry**

8. This region takes its name from a Germanic word for “foreigner” that was borrowed into Slavic tongues to designate speakers of Romance languages. For 10 points each:

[10] Identify this principality ruled by members of the Basarab dynasty, one of whom was Vlad the Impaler.

ANSWER: (Principality of) **Wallachia** [or Tara **Românească**] (the word is *Vlach*)

[10] The *Cantacuzino Annals* give a man of this name known as Negru or “The Black” as the first prince of Wallachia. A different prince of Wallachia with this name was Vlad the Impaler’s brother.

ANSWER: **Radu** (Radu Negru and Radu the Handsome)

[10] Wallachia united with Moldavia to form this modern-day country later led by Nicolae Ceaușescu.

ANSWER: **Romania**

9. Consider *Phlebas* and *The Hydrogen Sonata* are the first and last novels in this author’s *The Culture* series. For 10 points each:

[10] Name this Scottish science fiction writer who died of gallbladder cancer in 2013. His first published novel was *The Wasp Factory*.

ANSWER: Iain M. **Banks**

[10] Banks was nominated for, but did not receive, the science fiction award named for this British author who wrote *2001: A Space Odyssey*.

ANSWER: Arthur C. **Clarke**

[10] One of these objects was named after Iain Banks shortly after his death. In *The Little Prince*, one of these objects is designated B-612.

ANSWER: an **asteroid**

10. Students in this state initiated a case about unfair conditions at an all-black school in Farmville. For 10 points each:

[10] Identify this state, which was dominated by the Byrd Organization from the 1920s to the 1950s.

ANSWER: **Virginia**

[10] Senator Harry Byrd used this two-word term to refer to his strategy of organizing white politicians and localities across the state of Virginia to oppose racial integration.

ANSWER: **Massive resistance**

[10] Massive resistance was implemented a few years after this 1954 Supreme Court decision, which struck down “separate but equal” schools as unconstitutional.

ANSWER: **Brown v. Board of Education of Topeka** [accept either portion]

11. This god steals bananas from his grandmother until she agrees to help him restrain the sun. For 10 points each:

[10] Name this Polynesian trickster god, who shares his name with the second-largest Hawaiian island.

ANSWER: **Maui**

[10] In one story, Maui and his father work together to lift this object up so that humans may thrive. Pangu creates this object from the upper half of the shell of an enormous egg.

ANSWER: the **sky**

[10] In another story, Maui’s wife Hina is harassed by one of these creatures every time she goes to fetch water. Eventually, Maui lures the creature out of hiding and kills it with his axe.

ANSWER: a long eel

12. State some facts about a certain tennis legend, for 10 points each:

[10] This Czech-American holds the most titles in the open era and was the No. 1 women's tennis player from 1982 to 1986. A lesbian and LGBT-rights activist, she recently married Julia Lemigova.

ANSWER: Martina Navratilova [or Martina Šubertová]

[10] From the late 1980s until her 2006 retirement, Navratilova transitioned toward this type of tennis match, which uses the alleys between the tramlines. The Williams sisters often play together in this format.

ANSWER: doubles [accept women's doubles]

[10] This Indian player has a total of seventeen Grand Slam titles in men's and mixed doubles and has played in the Davis Cup more than 20 times. Most recently, he won three Grand Slam titles with Martina Hingis.

ANSWER: Leander Paes

13. This philosopher's attempts to fuse psychologism with mathematics in *The Philosophy of Arithmetic* earned him criticism from Gottlob Frege. For 10 points each:

[10] Identify this philosopher who introduced the term "lifeworld" for a collectively experienced universe.

ANSWER: Edmund Husserl

[10] This book by Jurgen Habermas attempts to develop a theory of modernity by synthesizing the concept of "lifeworld" with that of a "system" into a two-level model of society it attempts to rationalize.

ANSWER: Theory of Communicative Action [or Theorie des kommunikativen Handelns]

[10] The concept of "lifeworld" is often compared to, and may have been inspired by, the idea of "being in the world" introduced by this author to describe pre-*Dasein* existence in *Being and Time*.

ANSWER: Martin Heidegger

14. This composer's time in Ferrara, where he was possibly influenced by Savonarola's teachings, resulted in his *Missa Hercules Dux Ferrariae*. For 10 points each:

[10] Identify this most famous Franco-Flemish composer of the late 15th century who created the motet *Ave Maria...virgo serena* and the *Missa pange lingua*.

ANSWER: Josquin des Prez [accept either underlined portion]

[10] This contemporary of Josquin wrote extensively in praise of his music. A hymn written by this religious leader titled "A Mighty Fortress Is Our God" is quoted in Felix Mendelssohn's *Reformation* symphony.

ANSWER: Martin Luther

[10] Josquin wrote a *Deploration* on the death of this other Franco-Flemish composer, whom Antoine Busnois' *In Hydraulis* salutes. This choirmaster of St. Martin de Tours composed the *Missa prolationum*.

ANSWER: Johannes Ockeghem

15. Identify a few of Oxford's numerous literary appearances, for 10 points each:

[10] In a humorous travelogue, the narrator embarks on a boating trip with George and Carl from Kingston to Oxford. They are accompanied by this devilish fox terrier who burns his lip after attacking a tea kettle.

ANSWER: Montmorency (that travelogue is Jerome K. Jerome's *Three Men in a Boat*)

[10] This author wrote a satire in which all of the undergraduates at Oxford University commit suicide out of love for the title woman, *Zuleika Dobson*.

ANSWER: Sir Henry Maximilian "Max" Beerbohm

[10] Many of this author's characters, such as Paul Pennyfeather and Charles Ryder, attended Oxford. Those characters appear in his novels *Decline and Fall* and *Brideshead Revisited*.

ANSWER: (Arthur) Evelyn (St. John) Waugh

16. According to Weinberg-Witten theory, this particle can not be a composite particle in a QFT. For 10 points each:

[10] Name this spin-2 gauge boson that has yet to be discovered. This particle mediates the weakest of the four fundamental forces.

ANSWER: graviton

[10] The supersymmetric partner of the graviton, the gravitino, is a candidate for this "eerie" substance proposed to account for the missing mass of galaxies.

ANSWER: dark matter

[10] The source of gravitation is this quantity that describes the density and flux of energy and momentum in spacetime. It is multiplied by $8\pi G$ over c^4 on the right side of Einstein's field equation.

ANSWER: stress-energy tensor [or stress-energy-momentum tensor or energy-momentum tensor]

17. This Prime Minister's government enforced the Three-Day Week on the use of electricity due to constraints caused by coal miner strikes. For 10 points each:

[10] Identify this Conservative Party leader who, in opposition, dismissed Enoch Powell from his shadow cabinet over the Rivers of Blood speech.

ANSWER: Edward Heath

[10] Heath was often assumed to have this personal characteristic since he never married. Alan Turing was convicted under indecency laws for expressing this personal characteristic through his relationships.

ANSWER: being gay [or equivalents; accept anything involving forms of the word homosexual]

[10] This other Conservative PM's government was scandalized by John Vassall being blackmailed over his homosexuality, but that scandal was quickly eclipsed by the Profumo affair.

ANSWER: Harold MacMillan

18. Campaspe served as the model for this artist's *Venus Rising from the Sea*. For 10 points each:

[10] Name this Ancient Greek artist, whose other works included a portrait of Clitus the Black and the *Calumny*.

ANSWER: Apelles

[10] Apelles also depicted this man wielding a thunderbolt. A mosaic of this man was found in the House of the Faun in Pompeii, and the sun and the moon both appear in the sky in a painting titled for him by Albrecht Altdorfer.

ANSWER: Alexander the Great

[10] Another Ancient Greek artist named Zeuxis supposedly painted some of these fruits so realistically that birds tried to peck at them. In art, Bacchus is often shown holding a bunch of this fruit.

ANSWER: grapes

19. Deposits of this resource are found with sandstone in the Uintah Basin in Utah. For 10 points each:

[10] Identify this naturally occurring form of petroleum that is extracted en masse from oil sands like the ones near the Athabasca. The largest natural deposit of this substance is found in a lake in Trinidad and Tobago.

ANSWER: asphalt [or bitumen; or pitch; prompt on "tar"]

[10] The Athabasca oil sands in this prairie province with capital Edmonton are a major source of bitumen.

ANSWER: Alberta

[10] A foehn wind named for these Native American peoples originates in the mountains and sweeps across Alberta, much of the prairies, and the Great Plains. These Pacific Northwest peoples live along the lower Columbia river.

ANSWER: Chinook

20. This idea is the bedrock of the Lucas critique. For 10 points each:

[10] Identify this key assumption of economic models, which holds that agents take into account policy changes and other information when making decisions about the future.

ANSWER: rational expectations [prompt on rationality or rational choice]

[10] Rational expectations theory was used to argue that changing the supply of this quantity isn't an effective mechanism for institutions like the Federal Reserve to manage recessions.

ANSWER: money [accept money supply]

[10] In 1980, this economist and Sanford Grossman published an article arguing that rational expectations does not reflect reality, an idea he built on in his book *Whither Socialism?*

ANSWER: Joseph (Eugene) Stiglitz

21. The narrator meets the chimney sweep J. P. at an alcohol rehab clinic in this collection's story "Where I'm Calling From." For 10 points each:

[10] Name this short story collection published in 1983. In its title story, a blind widower named Robert visits the narrator and his wife.

ANSWER: Cathedral

[10] This American author of *Cathedral* depicted a quartet of friends discussing love over bottles of gin in his story "What We Talk About When We Talk About Love."

ANSWER: Raymond (Clevie) Carver, Jr.

[10] Fellow American writer Nathan Englander titled his newest story collection *What We Talk About When We Talk About* this person, who is better known for the diary she kept while hiding from the Nazis in Amsterdam.

ANSWER: Anne **Frank**

22. Demonstrate that your knowledge of India's tech development goes beyond changing your Facebook profile picture, for 10 points each.

[10] This Prime Minister of India signed a bunch of tech deals in late September 2015, including the deal with Mark Zuckerberg that inspired the new profile picture options.

ANSWER: Narendra **Modi**

[10] This capital of Karnataka, a city of 8 million in central India, is known as the "Silicon Valley of India."

ANSWER: **Bangalore**

[10] India's success in producing tech workers is partly credited to these sixteen places of public higher education, whose entrance exams are highly competitive and only have a 2% pass rate.

ANSWER: **I**ndian **I**nstitutes of **T**echnology [**IITs** - the specific name is required]

23. Identify the following about the great age of Portuguese exploration, for 10 points each.

[10] It was inaugurated by this Portuguese prince, who sponsored numerous voyages down the African coast.

ANSWER: **Henry the Navigator** [or Infante **Henrique** of Portugal, Duke of Viseu; prompt on **Henry**]

[10] It involved the heavy use of these small, highly maneuverable ocean-worthy sailing ships, which had shallow keels that could sail up a river. The similar carrack was developed for ocean trade.

ANSWER: **caravels**

[10] It resulted in the setting up of a large number of these armed trading posts, which served as markets, customs houses, and warehouses. They were adapted from similar buildings the Hansa built in its major cities.

ANSWER: **feitorias** [or **factories**]

24. The cyclopentadienyl cation and cyclobutadiene are textbook examples of molecules with this property. For 10 points each:

[10] Name this destabilizing property exhibited by molecules with $4n$ pi electrons.

ANSWER: **antiaromatic** [do not accept or prompt on "aromatic" or "nonaromatic"]

[10] In this form of spectroscopy, aromatic and antiaromatic compounds exhibit a ring current, altering their expected chemical shifts. Carbon-13 and protons are the nuclei most commonly studied with this technique.

ANSWER: **NMR** spectroscopy [or **Nuclear Magnetic Resonance** spectroscopy]

[10] When aromatic compounds with a benzyl group, like toluene, are subjected to mass spectrometry they frequently rearrange to this seven-membered aromatic ring.

ANSWER: **tropylium** cation [prompt on "[C₇H₇]⁺"]