

MKULTR4: Very Vague And Not Well-Funded

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Packet by Nicolas Malebranche's Chocolate Homunculus & Forge Masters

Tossups

1. **Above 146 degrees celsius, this element's iodide adopts its alpha-polymorph and becomes a fast ion conductor. This element's oxide can catalyse the rearrangement of ketenes to alpha-diazoketones in the Wolff rearrangement. Nanoparticles of this element are widely used on account of their powerful antimicrobial properties. This element's iodide is often used in (*) cloud seeding. This metal has the lowest resistivity of any element under standard conditions. Aldehydes can be told apart from ketones by reacting them with an ammoniacal solution of this element called Tollens' reagent. For 10 points, name this precious metal above gold on the periodic table.**

ANSWER: Silver (or Ag)

2. **Vincentian footballer Ezra Hendrickson scored the winning goal in this club's only continental title, and their first domestic title was won with a golden goal from Ecuador's Eduardo Hurtado. They contest a derby nicknamed 'El Tráfico' with their local rivals, although it has only been played twice to date. In 2018, a player scored two debut goals for this team, including a 45-yard half-volley, after taking out an advert in a local newspaper saying "You're (*) Welcome". Players from this team have won eight of the eleven ESPYs awarded to MLS players: those players were Robbie Keane, Landon Donovan and David Beckham. For 10 points, name this team whose name refers to the "stars" in nearby Hollywood.**

ANSWER: LA Galaxy

3. **In 2014, a gamma ray and neutron detector found unexpected plumes of water vapour being emitted from this body. This celestial body was found by Gauss with his namesake orbit determination method after it disappeared behind the sun. Anders Lexell mathematically refuted this body's discoverer's claim that it was actually a (*) comet. Along with Vesta, this body was visited by the NASA Dawn Spacecraft in 2015. Giuseppe Piazzi discovered this body, which is the largest object between Mars and Jupiter. For ten points, name this dwarf planet, the largest object in the asteroid belt, named for the Roman goddess of agriculture.**

ANSWER: Ceres <O.Sci> <BB>

4. **Some accounts claim that one figure in this conflict choked to death on eels after sacking Bury St Edmunds. This conflict's Battle of the Standard saw the defeat of David I of Scotland. The leader of one side in this conflict was captured by Robert of Gloucester at the Battle of Lincoln. The other leader during this conflict crossed an (*) icy River Isis while escaping Oxford Castle, and that leader's son was named as her rival's successor in the Treaty of Wallingford. This conflict began after the death of William Adelin in the White Ship disaster, which left Henry I without a legitimate son. For 10 points, name this civil war in England between Stephen of Blois and the Empress Matilda, named for its lawless nature.**

ANSWER: The Anarchy

5. **Élisabeth Vigée Le Brun painted one person with this surname as a bacchante and a Persian sibyl. That person was primarily known as the muse of artist George Romney. Another person with this surname is the alphabetically latter namesake of a theorem that states that every matrix over a commutative ring satisfies its own characteristic polynomial. The capital of Bermuda is named for a man with this surname, as is an (*) operator which is equal to the Legendre transform of the Lagrangian. That operator is the sum of the potential and kinetic energies of a system. For ten points,**

name this surname that is also the title of a Lin-Manuel Miranda musical about a man who duels with Aaron Burr.

ANSWER: **Hamilton** [Prompt on 'Nelson', 'Lyon', or 'Hart' on the first two lines by asking "What is she commonly known as?", prompt on 'Cayley-Hamilton theorem', accept **Hamiltonian**]

6. This author created a character who plans to atone for his sins by building temples, but dies of an apoplexy before the first is completed. In a novel by this author, a timber merchant shoots his dog Flo in the head before committing suicide. In another novel by this author, the protagonist notices a character's disappearance when his name is removed from a (*) chess committee roster. In that novel by this author, the protagonist buys a coral paperweight from an antique shop. This author wrote a novel set in Kyauktada, in which the corrupt magistrate U Po Kyin ruins the life of John Flory, as well as a novel whose protagonist betrays Julia after being threatened with a cage of rats. For ten points, name this author of *Burmese Days* and *Nineteen-Eighty Four*.

ANSWER: George **Orwell** [or Eric Arthur **Blair**]

7. The composer of this piece included a sketch of one of its themes in a birthday card to a friend, which was inspired by a song with the words "High on the hill, deep in the dale" he had heard sung by a shepherd. A theme in this piece's final movement inspired the opening horn solo in Mahler's 3rd symphony. This C-minor piece begins with the strings rising chromatically over a pounding timpani. Horns and trombones imitate Swiss (*) "alphorns" [ALP-HORNS] in a theme that pervades this piece's final movement. This piece's composer said that "any ass could see" the similarity of its finale to 'Ode to Joy' and Hans von Bülow nicknamed it "Beethoven's Tenth". For 10 points, name this first large orchestral work written by the composer of the *Academic Festival Overture*.

ANSWER: **Brahms' Symphony No. 1** [or obvious equivalents; do NOT accept cutesy answers like "Beethoven's Tenth"] <Forge/BS>

8. After his excommunication, the Miaphysite bishop Anthimus of Constantinople was hidden in the quarters of this person for ten years. In one conflict, this person insisted upon the execution of Hypatius and tried to have John the Cappadocian tried for murder. This person is recorded as declaring "May I never be separated from this purple" by an author who also described this person as lying naked on a stage and having (*) geese peck grain from her crotch as part of a striptease. She dissuaded her husband from fleeing the city when violence erupted between supporters of the Blue and Green chariot racing factions in the Nika riots. For 10 points, name this Byzantine Empress, wife of Justinian the Great.

ANSWER: **Theodora**

9. In a 2017 book, an author with this surname wrote that guilt and secularism has led to Europe losing its will to defend its cultural identity, leading to mass migration. This is the married name of an essayist who wrote that society had "despoiled the fertile brain of the female" and argued that men and women were equally creative. A political scientist with this surname claimed that white Americans have split into a New Lower Class and a New Upper Class through (*) "cognitive homogamy" in *Coming Apart*. That writer also co-authored a book that claimed that inherited intelligence is a better predictor of success than socioeconomic class. For 10 points, what surname is shared the author of *The Strange Death of Europe*, Douglas, the author of *On the Equality of the Sexes*, Judith, and the co-author of *The Bell Curve*, Charles.

ANSWER: **Murray** <Forge>

10. In May 2018, Ben Redhead et al linked this disease to increased levels of Herpesvirus 6A and 7. A mutation in the microglial expressed TREM2 gene has been shown to increase the risk of this disease, as does the APOEε4 allele. Subsequent studies have not supported Crapper-McLachlan's claim that this disease is linked to the use of aluminium saucepans. One drug used to treat this

disease, (*) donepezil, is a acetylcholinesterase inhibitor. The hyperphosphorylation of tau proteins leads to neurofibrillary tangles in this disease. A build-up of beta amyloid plaques is associated with the “early onset” form of this disease. For 10 points, name this neurodegenerative disease that accounts for the majority of dementia cases.

ANSWER: Alzheimer’s

11. One poem by this author follows an ant on a tablecloth, and ends by noting that the events of the poem were “nobody else’s affair” and “couldn’t be called ungentle”. In another poem by this author, the speaker is distracted whilst splitting wood as one of the title characters yells “hit them hard”. This poet of “Departmental” and “Two Tramps in Mud Time” wrote a poem that ends “Dead, was all he answered”. That poem by this author sees the title character (*) Silas turn up at the house of Warren and Mary. The speaker of another poem by this author notes that his apple trees will not cross the title structure before noting that “good fences make good neighbours”. For ten points, name this poet of “The Death of the Hired Man” and “Mending Wall”.

ANSWER: Robert Frost

12. Richards Island lies largely within the bounds of this river. Locals may refer to this river as “Deh Cho” which translates simply as “big river”. The Great Slave lake is drained by this river, whose namesake followed it to Lake Athabasca. This river’s discoverer named it the Disappointment river, as he expected it to drain into the (*) Pacific Ocean. The melting of the Laurentide Ice Sheet led to a large influx of fresh water into the beaufort sea in the Arctic Ocean through this river, the majority of which lies within the Northwest Territories. For ten points, name this longest river in Canada.

ANSWER: Mackenzie River

13. Slim Willie McCoy kills a rival performer of this activity in Jim Croce’s debut single ‘You Don’t Mess Around With Jim’. Notable experts at this activity include Kid Delicious, Cornbread Red and Titanic Thompson. This activity leads to “libertine men and scarlet women” and is “the devil’s tool” according to Professor Harold Hill in *The Music Man*. Players of this sport compete for the (*) Mosconi Cup. In one film, Jackie Gleason played an expert at this activity, Minnesota Fats, who is eventually defeated by Fast Eddie Nelson, a role Paul Newman revived 25 years later in an Oscar-winning performance. Those films were *The Hustler* and *The Color of Money*. For 10 points, name this cue sport played on a table with six pockets and variants called straight and nine-ball.

ANSWER: pool [accept more specific answers, such as nine-ball pool or “Trouble with a capital T, which rhymes with P, which stands for Pool!”] <Forge/EL>

14. This character once jokingly said that she had been married since 1485, although she was probably born in 1941. This character’s laugh is likened at one point to “somebody machine-gunning a seal”. After an Irish character claims to like a woman with spirit, this character repeatedly hits him with an umbrella. This character is described as “having the ability to kill a man at ten paces with one blow of her tongue”. This character admires the work of (*) Harold Robbins, whom she discusses with two American guests. A maid dresses up as this character after she walks out on her husband for seemingly forgetting their wedding anniversary. This character is often seen talking to her friend Audrey on the phone, usually repeatedly saying the phrase “Oh I know”. For ten points, name this wife of Basil in *Fawlty Towers*.

ANSWER: Sybil Fawlty [Prompt on Fawlty alone] <Trash> <NMCH/EL>

15. This artist’s portraits *Cloe* and *Pearl Johnson* were painted in the segregated ward at Johns Hopkins Hospital, and Kenneth Clark said that this artist’s work had a “commonplaceness”. One of this artist’s works was commissioned by the War Artists’ Advisory Committee with the intention of bolstering the recruitment of women to ordnance factories, and depicts a young woman operating

a mechanical lathe. In one painting the enamellist Ella Naper appears naked with her back to the viewer alongside the artist at work. In 1937 she became the (*) first woman elected as a Royal Academician. For 10 points, name this painter of *Self Portrait with Nude* and *Ruby Loftus Screwing a Breech Ring*.

ANSWER: Laura Knight

16. Pangeran Puger fought a war of succession for this place, where Trunajaya had earlier led a rebellion against the Mataram Sultanate. This place was the site of the Battle of Bubat, at which Hayam Wuruk and Gajah Mada orchestrated the killing of almost all of the royal household of the Sunda Kingdom. The Shailendra dynasty emerged from this island, where they established Prambanan, Sewu, and Borobudur temples. (*) Jan Pieterszoon Coen razed a Banten port on this island and founded the city of Batavia, which became the capital of the Dutch East Indies. For 10 points, name this island in Indonesia, the site of Jakarta.

ANSWER: Java [accept Jawa]

17. One theorist of this practice developed the Two Sigma Problem, which claims that one method of this practice leads to results that are two standard deviations better than the conventional way of performing this practice. That theorist, Benjamin Bloom, developed a namesake taxonomy of objectives in this practice that include analysis, synthesis and evaluation. Jerome Bruner's theory of "scaffolding" is used extensively in this practice, and is inspired by (*) Lev Vygotsky's idea of a "zone of proximal development". One practitioner in this activity argued that it was beneficial to mix age groups based on her work at the Casa Del Bambini. For ten points, name this field of Maria Montessori.

ANSWER: education (accept synonyms such as learning, teaching, etc.)

18. One man in this book is challenged by another man who asks, "You are Israel's teacher, yet you do not know these things?". A Pharisee in this book asks how someone can be born again when they are old. The first half of this book is often known as the Book of Signs. This book features a miraculous catch of 153 fish, the second reported occurrence of such an event. This book tells of a man in a (*) cave who is instructed to "come forth" in spite of his sister Martha's objections. The shortest verse in the Bible, "Jesus wept" appears in this book, which contains the most detailed account of Lazarus being raised from the dead. The only non-synoptic gospel, for ten points, the phrase "In the beginning there was the word" opens which book of the bible, the last of the four gospels?

ANSWER: Gospel of John <Rel.> <EL/NMCH>

19. This author wrote a play in which Ernst Röhm represents loyalty and camaraderie. That play, *My Friend Hitler*, is a "mirror" of a play in which a noblewoman leaves her notorious husband upon his release from prison: *Madame de Sade*. In one of this author's works, two characters are forced to search a lawn for a diamond ring in a downpour, and the three reincarnations of a young aristocrat are identifiable by a pattern of (*) moles. In another work, a club-footed cynic is friends with a Buddhist acolyte who eventually burns down the title structure. This author committed *seppuku* after a failed *coup d'état*. For 10 points, name this author of the *Sea of Fertility* Tetralogy and *The Temple of the Golden Pavilion*.

ANSWER: Mishima Yukio

20. An essay on this subject discusses how it simultaneously temporizes and spaces despite being unable to refer to itself in that way. That essay on this subject introduces a new word to enable the distinction between beings and capital B Being. One thinker defined repetition as this word "without a concept". That definition is made in a book titled for this word *and Repetition* by Gilles Deleuze. Another thinker punned on this word as part of a project of arguing against the (*) priority of speech over text. That thinker deliberately misspelled the French for this word to name a

concept that defers meaning. For 10 points, Derrida used what term to describe the distinction between signs that are not the same.

ANSWER: **difference** [or **différance** or **différence**]

Bonuses

1. For ten points each, answer some questions about cartoon rodents:

[10] This is the name of Danger Mouse's bumbling, bespectacled sidekick, who is apparently meant to be a hamster in a blue suit.

ANSWER: **Penfold**

[10] In *Kim Possible*, the eponymous agent's sidekick Ron Stoppable has a pet rodent named Rufus, who is of this species with taxonomic name *Heterocephalus glaber*.

ANSWER: **Naked mole-rat** [prompt on 'mole-rat']

[10] Whilst temporarily transformed into a llama, the main character of this film antagonises a squirrel named Bucky, who later reveals his location to the villain and her henchman, Kronk.

ANSWER: **The Emperor's New Groove** <NMCH/EL>

2. This group initially established their base on St. George's Hill in Surrey, but were later forced to move to Little Heath after attracting negative attention from landowners. For ten points each:

[10] Name this anti-propertarian group who were formed in the aftermath of the English Civil War and believed that the common lands should belong to the poor to be used for growing crops, as per the word of God.

ANSWER: **Diggers** (accept but DO NOT READ OUT **True Levellers**; do not accept or prompt on Levellers)

[10] The Diggers regarded themselves as the 'true' version of this other radical Civil War-era group, who were associated with the imprisoned MP John Lilburne.

ANSWER: **Levellers**

[10] The Diggers' chief intellectual force was this man who advocated the commonality of the land in the manifesto *The True Levellers' Standard Advanced*. This man was later the subject of a 1975 film by Kevin Brownlow.

ANSWER: Gerard **Winstanley**

3. After this man was defeated, he was paraded around in a metal cage before being publicly hung, drawn and quartered. For ten points each:

[10] Name this leader of a namesake cossack rebellion who led rebel troops in the battle of Kazan. This man laid claim to power by pretending to be Peter III.

ANSWER: Yemelyan **Pugachev**

[10] Pugachev's rebellion took place during the reign of this Russian Empress, the wife of Peter III. Potemkin villages were created by a subordinate of this empress.

ANSWER: **Catherine the Great** [or **Catherine II** prompt on just **Catherine**]

[10] Pugachev's rebellion was the basis for *The Captain's Daughter* and *A History of Pugachev* by this writer.

ANSWER: Alexander **Pushkin**

4. This queen had more than fifty members of a third-gender caste called *chibados* in her court as concubines. For 10 points each:

[10] Name this queen in 17th century Angola. In her 40 year political and military career, she first allied herself with the Portuguese to consolidate power among the Mbundu people, and later formed a coalition in order to resist them.

ANSWER: Ana **Nzinga** of Ndongo and Matamba [or (Ana de Sousa) **Nzinga** Mbande; accept **Njinga**]
[10] Nzinga first appears in historical records when she met with the Portuguese governor of this city, where it is said that she sat on the back of her servant when the governor didn't offer her a chair. This city became the centre of the Portuguese slave trade and is now the capital of Angola.

ANSWER: **Luanda**

[10] Nzinga had been sent to Luanda as an emissary by her brother, King Mbandi. Following his suicide, she gained the support of the Portuguese by performing this action.

ANSWER: **converting to Christianity** [accept **being baptised**, **converting to Roman Catholicism** and other equivalents]

5. For ten points each, answer some questions about people with a shared first name.

[10] A Christian saint with this first name was beheaded by soldiers of Hadrian after throwing her in a vat of boiling pitch had no effect. This is also the full first name of Minnie the Minx from the *Beano*.

ANSWER: **Hermione**

[10] Hermione appears in this Shakespeare play, which tells of the wedding between Perdita and Florizel and contains the notable stage direction "Exit Pursued by a Bear".

ANSWER: A **Winter's Tale**

[10] In Greek Mythology, Hermione was the only child of this Spartan king. This king was a major part of the Trojan War, which started after Paris abducted this man's wife Helen.

ANSWER: **Menelaus** <NMCH>

6. Most pathways for the synthesis of this compound start from tryptophan. For 10 points each

[10] Name this most common plant hormone of the auxin class.

ANSWER: **Indole-3-acetic acid** (or 3-**IAA**)

[10] Another biologically important compound synthesised from tryptophan is this neurotransmitter whose re-uptake is selectively inhibited by a class of antidepressants.

ANSWER: **Serotonin**

[10] This vitamin is synthesised from tryptophan. It is administered to pellagra sufferers.

ANSWER: **Niacin** (or **Vitamin B3** or **Nicotinic acid**)

7. There are two finished versions of this painting, which are held in Birmingham and Cambridge respectively. For 10 points each:

[10] Name this painting which depicts an emigrating couple, based on the artist and his own wife, sat on a crowded boat as the white cliffs of Dover recede into the background.

ANSWER: **The Last of England**

[10] *The Last of England* is a painting by this man, a lesser known pre-Raphaelite-inspired artist whose twelve murals of Mancunian history can be found in the Great Hall of Manchester Town Hall.

ANSWER: Ford Madox **Brown**

[10] *The Last of England* is a painting in this form, which had its origins in classical vase-paintings but was encountered more frequently in Renaissance works, such as Botticelli's *Madonna of the Pomegranate*.

ANSWER: **Tondo** (accept anything suggesting **round**-ness)

8. For ten points each, answer some questions about 21st century French cinema:

[10] This 2001 romantic comedy stars Audrey Tautou as the eponymous protagonist, who falls in love with Nino Quincampoix after accidentally taking his album of discarded photo booth pictures.

ANSWER: **Amélie** (or **Le Fabuleux Destin d'Amélie Poulain**)

[10] The 2004 drama *The Chorus*, about a music teacher who forms a choir in a school of troubled boys, is based on this 1945 Jean Dréville film.

ANSWER: *La Cage aux rossignols* [accept **A Cage of Nightingales**, or other reasonable translations like *The Nightingale Cage*]

[10] This actress starred opposite Jean Dujardin in the Oscar-winning film *The Artist*, as well as appearing in many other films directed by her husband, Michel Hazanavicius.

ANSWER: Bérénice **Bejo** <EL/NMCH>

9. Monks in this religion are only allowed to possess scripture, a water-gourd, and a small broom to sweep away insects. For ten points each:

[10] Name this religion whose followers adhere to five vows including *ahimsa* or non-violence.

Tirthankaras are holy beings in this religion.

ANSWER: **Jainism** [accept **Jaina** dharma]

[10] In addition to non-violence, non-stealing, non-possession, and chastity, devout Jains adhere to the vow of *satya*, which represents this practice. If this practice conflicts with *ahimsa*, Jains are expected to stay silent.

ANSWER: **Truthfulness** [accept telling the **truth**]

[10] Jainism was revived in the 6th Century BC by this 24th and final tirthankara. The *Agamas* consist of the teachings of this man.

ANSWER: **Mahavira** [or **Vardhamana**] <EL/NMCH>

10. Answer the following questions on popular music inspired by the works of JG Ballard, for ten points each:

[10] This post-punk band recorded a song titled *The Atrocity Exhibition* to open their album *Closer*, their last album before singer Ian Curtis committed suicide.

ANSWER: **Joy Division**

[10] Taking their name from a Ballard short story, this other post-punk group described a romantic break-up as “a declaration of the intention to stop extension into my airspace” in their song *Independence Day*.

ANSWER: **Comsat Angels**

[10] Trevor Horn was inspired by Ballard’s story *The Sound-Sweep* to write this track, which opens “I heard you on the wireless back in ‘52” and notably became the first song to be played on MTV.

ANSWER: **Video Killed The Radio Star** (by the Buggles) <NMCH>

11. Offerings of cloth and the alcoholic drink chicha were commonly made to this god. For ten points each:

[10] Name this god who was served by virgin priests known as Mamakuna. The eponymous Raymi festival held on the shortest day of the year was dedicated to the worship of this god.

ANSWER: **Inti**

[10] Inti gave this son of his a golden staff, and told him to build a temple where it sank into the earth. This man hence founded Cusco and became the first governor of the Inca.

ANSWER: **Manco** Cápac [or **Manco** Inca or Ayar **Manco**, prompt on any partial answers]

[10] Inti was a god of this heavenly domain. Other deities associated with this domain include Ra in Egypt and Helios in Greece.

ANSWER: The **Sun** <Myth> <NMCH>

12. This novel features a charismatic classics professor who begins a class with “I hope we’re all ready to leave the phenomenal world, and enter into the sublime.” For 10 points each:

[10] Name this novel in which Richard Papen and his classicist friends at Hampden College kill their fellow student Bunny.

ANSWER: ***The Secret History***

[10] *The Secret History* is a novel by this author of *The Goldfinch*.

ANSWER: Donna **Tartt**

[10] Hampden College is believed to be based upon Bennington College where Tartt studied alongside Bret Easton Ellis and this author of *The Fortress of Solitude* and *Motherless Brooklyn* who wrote about his friendship with Tartt and Bennington in his essay ‘The Zelig of Notoriety’.

ANSWER: Jonathan **Lethem**

13. Each chapter of this novel begins with a jingle for the title product. For ten points each:

[10] Identify this novel written from the perspective of Joe Chip, an 'anti-psyhic' working for the Runciter Corporation whose reality becomes increasingly warped after a disastrous Lunar mission.

ANSWER: **Ubik**

[10] *Ubik* is a novel by this author, who wrote about the robot-hunter Rick Deckard in *Do Androids Dream of Electric Sheep?*

ANSWER: Philip K. **Dick**

[10] In this other Dick novel, the narcotics officer Bob Arctor goes undercover to investigate the popularity of the mind-destroying drug Substance D, only to become addicted to it himself.

ANSWER: A **Scanner Darkly**

14. Jeanne Loriod is generally regarded as the most influential performer and proponent of this instrument. For 10 points each:

[10] Name this early electronic instrument, named after its French inventor. Similar in sound to the theremin, it is operated by manipulating a wire across a keyboard using a metal strip.

ANSWER: **Ondes martenot** [OND MAR-TEN-OH] [or **ondes musicales**]

[10] The ondes martenot was notably used in this work, which was inspired by Hindustani classical music and birdsong. The second part of its composer's "Tristan trilogy", it contains recurring "statue", "flower", and "love" themes.

ANSWER: **Turangalila-Symphonie**

[10] *Turangalila-Symphonie* is a work by this French composer, who documented the seven "modes of limited transposition" in his book *The Technique of my Musical Language*. He composed his *Quartet for the End of Time* whilst in a prisoner-of-war camp.

ANSWER: Olivier **Messiaen** <Forge/BS>

15. The A-theory of this concept states that past, present and future objectively exist, in contrast to the tenseless B-Theory. For ten points each:

[10] Name this concept that is paired with space to form a namesake continuum.

ANSWER: **Time**

[10] This idealist philosopher contended that both the A-Series and B-Series were inadequate descriptions of time, and consequently that time did not really exist, in his essay *The Unreality of Time*.

ANSWER: J.M.E. **McTaggart**

[10] This alternative theory of time argues that the past and present objectively exist, but the future does not. In this theory, more of the world comes into existence with the passage of time.

ANSWER: **Growing Block** theory

16. The Bohr-van Leeuwen theorem states that, without invoking quantum physics, systems in thermal equilibrium cannot be magnetic. For ten points each, answer some questions about quantum-mechanical models of magnetism:

[10] This simple model of a magnetic material consists of a lattice where atomic spins, pointing either up or down, reside on each lattice point.

ANSWER: **Ising** model

[10] This physical principle, which states that two fermions cannot occupy the same quantum state, gives rise to the lowering of energy when spins on the lattice align.

ANSWER: **Pauli Exclusion** principle

[10] The 2D Ising lattice, the lowest dimensional lattice which displays a phase transition, was solved analytically by this Norwegian-American physicist.

ANSWER: Lars **Onsager** <Physics> <YY>

17. FTPE, have some questions about the women's singles competition at the 1984 Australian Open.

[10] The 1984 Australian Open was won by this player. In doing so, she became the first player in the open era to win 1,000 matches, and she has the highest win rate of any player.

ANSWER: Chris **Evert** [accept Christine Marie **Evert-Lloyd**]

[10] Evert defeated this Czech player, the only player to reach four grand slam singles finals without a win, in the final.

ANSWER: Helena **Suková**

[10] Suková defeated this player in the semi-final, ending a 74-match winning streak, the longest ever in all forms of tennis. This player had represented the United States since defecting from Czechoslovakia in 1975.

ANSWER: Martina **Navratilova** <EL/Forge>

18. Name some things about the Arrhenius equation. For ten points each:

[10] The Arrhenius equation states that this quantity symbolised k is equal to the pre-exponential factor times the exponential of minus the activation energy over RT. Roughly speaking, this constant quantifies how fast a reaction occurs.

ANSWER: **Rate** Constant

[10] The pre-exponential factor in the Arrhenius equation can be expressed as the collision frequency multiplied by this factor. More generally, this adjective describes the repulsion between overlapping electron clouds.

ANSWER: **Steric** Factor [prompt on **rho**]

[10] This equation can be used as an alternative to the Arrhenius equation, usually in systems that are less relevant to the collision model. This equation which is used in transition state theory gives the relationship between Gibbs free energy and reaction rate.

ANSWER: **Eyring**-Polanyi Equation <Chem> <BB>

19. The narrator of this novel concludes it by wishing there was someone around to whom he could say sorry. For ten points each:

[10] Name this novel in which undercover CIA agent Alden Pyle is assassinated during the Vietnam war. Much of this novel centres around a love triangle involving the dancer Phuong.

ANSWER: *The **Quiet American***

[10] The Quiet American was written by this extremely Catholic English author who also wrote *Brighton Rock*.

ANSWER: Graham **Greene**

[10] In Graham Greene's *Brighton Rock*, the 17-year-old gang leader Pinkie Brown kills Fred Hale. Fred had been sent to Brighton to secretly distribute these items around town for use in a newspaper competition.

ANSWER: **cards**

20. This country's second largest lake by area, Lake Khovsgol, is nicknamed the "younger sister of the sister lakes". For ten points each:

[10] Name this country, whose highest point is Khuiten peak.

ANSWER: **Mongolia** [or **Monggol** Ulus]

[10] Mongolia's largest river system, the Selenga drains primarily into this lake. This lake's name derives from the Mongolian word for nature, and is widely considered to be the oldest lake in the world.

ANSWER: Lake **Baikal** [or **Baigal** Nuur]

[10] Much of Southeastern Mongolia is taken up by this desert which is shared with China.

ANSWER: **Gobi** Desert <Geo> <BB>

Tiebreaker

This organ can decrease in volume by up to 40% as a result of strenuous exercise, and the enlargement of this organ is one of the main symptoms of Felty's syndrome. Pain in the left shoulder known as Kehr's sign is a symptom of the rupture of this organ. Percussing Traube's space can be used to detect the enlargement of this organ, which is the most commonly (*) injured organ in blunt abdominal trauma. Sickle cell anemia can cause sequestration of this organ. The two main cell types in this organ are separated by the marginal zone. The Cords of Billroth are found in this organ's red pulp, while lymphoid tissue makes up its white pulp. For ten points, name this organ that filters and stores red blood cells.

ANSWER: **Spleen** <Bio> <BB>