

Berkeley Late Spring Tournament—I Know Kung Fu (2004)
Questions by Stanford (Eric and John and Chris S.)

1. A Babylonian account of his early years claims he hailed from Azupiranu, and that while he was a gardener to Akki, the drawer of water, Ishtar granted him her love. His attacks to the south were so successful, he was able to cleanse his army's weapons in the "nether sea," or Persian Gulf, and he forced Lugalzagesi's neck beneath a yoke and drove him to the sacred gate of Enlil at Nippur around 2370 BCE. FTP, name this Semitic conqueror who founded the Akkadian Empire.

Ans: Sargon or Sarru-kin or Sharru-kin of Akkad

2. In biology, this name is given to a set of modified dendrites found near and similar in function to Merkel's discs. In physics, the effect of this name is associated with a penetration depth in the London equation which characterizes the exponential decay of the magnetic field. The dendrites are found closer to the surface than Pacini's corpuscles, while the effect predicts perfect diamagnetism in certain supercooled substances. FTP, give this name shared by a set of pressure-sensing corpuscles and the effect in which superconductors expel magnetic fields.

Ans: Meissner (accept Meissner corpuscle or Meissner's corpuscles before "In physics, the effect of this name")

3. This type of musical piece has outstanding examples by Cherubini, Dvorak, Bruckner, and Durufle. Berlioz composed a piece of this type in 1837. Brahms and Britten composed versions that depart from the standard text, relying respectively on the Luther Bible, and on a mixture of Latin prayers with the poems of Wilfred Owen. Verdi's version, due to its huge orchestra and choir, has been jokingly called his best opera. FTP, identify this type of musical piece, famous examples of which were also written by Mozart and Faure.

Ans: Requiem (do not accept anything more specific)

[Note, the Brahms and Britten pieces referred to were the German Requiem and the War Requiem.]

4. Three things in this work make a "pocketa-pocketa" sound: the cylinders of a Navy hydroplane going through the worst storm in 20 years, a failing anesthetizer during an operation on a millionaire banker, and the flame-throwers heard as the main character embarks on a suicide bombing run. Meanwhile, the main character annoys a cop, a parking lot attendant, and his wife, who is accompanying him on a trip to Waterbury. The title character buys overshoes and a puppy biscuit, but escapes the tedium of life by imagining himself in various heroic situations in, FTP, what James Thurber story?

Ans: The Secret Life of Walter Mitty

5. Gödel formalized Leibniz's version of it, taking as an axiom that the set of all positive properties is an ultrafilter. The text *On Behalf of the Fool* discusses Gaunilo's island as a refutation of one version, while Kant attacked Leibniz's version by stating that existence is not a predicate. FTP name this argument presented in the *Proslogion* by St. Anselm which attempts to prove God's existence from God's perfection.

Ans: ontological proof or ontological argument

6. In the Sommerfeld model, this quantity is split into radial and azimuthal portions satisfying different quantum conditions. For any matrix element, the radial integral is never 0 so there is no selection rule on it. For hydrogen, the degeneracy of an energy level is given by its square, and the K shell has a value of 1. The azimuthal quantum number varies between 0 and 1 less than, FTP, what number which determines the energy of levels?

Ans: principal quantum number or n

7. This battle was precipitated by the formation of the League of Armed Neutrality in 1800, which had already begun to disintegrate by the time of the battle. With the British squadron weakened by having several ships running aground, Sir Hyde Parker issued the order to withdraw, but Admiral Horatio Nelson allegedly placed his telescope to his glass eye and claimed that he could not see any order, and successfully lead the British to victory. For ten points, what is this 1801 battle where Nelson defeated the Danish navy at their capital?

Ans: Battle of Copenhagen

8. When he was nine years old, he witnessed a famine in Bengal in which 3 million people died. He later concluded that sufficient food did exist at that time, but job loss and poverty prevented people from obtaining it. His 1981 book *Poverty and Famines* argues that such a situation is common. His 1970 *Collective Choice and Social Welfare* was an important text in welfare economics. FTP, identify this Indian economist who won the 1998 Nobel Prize in Economics.

Ans: Amartya Sen

9. It represents a "marriage bed and marriage temple," and the poet feels that he and his lover are "cloistered in these living walls of jet." The poet's lover purples her nail getting rid of it, despite the poet's warnings against triple murder. This creature "enjoys before it woo," but its actions "cannot be said/ A sin, or shame, or loss of maidenhead," yet, says the speaker, its action "is more than we would do." FTP, identify this creature, inside of which the mingled blood of the lovers symbolizes marriage, an insect which bites the speaker and his lover in a poem by John Donne.

Ans: The Flea

10. Drafted 219th overall in the 1994 entry draft, he won the Calder Trophy in his rookie season of 2000-2001 by going 32-21-7 with a 2.19 goals-against average. On March 10, 2002, he became the seventh goalie, and the first European goalie, to score a goal in an NHL game. He faced his former backup, Miikka Kiprusoff, in the 2004 Western Conference Finals as his Sharks battled the Flames. For ten points, who is this Sharks goalie, who shares his last name with a famous Russian novelist?

Answer: Evgeni Nabokov

11. In the central rod domain of intermediate filaments, parallel copies of this motif form coiled-coil dimers. This structure forms when hydrogen bonds form regularly between the n and n+4 amino acid residues. Proline disrupts this structure, which has phi and psi angles of -57 and -47, respectively. It was first proposed in papers by Branson, Corey, and Pauling, but they did not consider the handedness. With 3.6 amino acid residues per turn, FTP name this protein secondary structure in the form of a spiral.

Ans: alpha helix

12. Turret, North Window, South Window, Double, and Delicate are the names of some of its namesake attractions, of which there are about 2000. The longest, Landscape, is about 300 feet long and only 11 feet thick at its narrowest point. The collapse of a salt dome fractured nearby rocks into pinnacles, later eroded by the wind to form the namesake red sandstone features. FTP, identify this national park, located near Moab, Utah.

Ans: Arches National Park

13. During an illegal game of Scrabble, the title character learns the meaning of the phrase "Nolite te bastardes carborundorum." The title character's friend Moira ends up at Jezebel's after escaping from the Rachel and Leah Re-education Center. Groups of women in this novel include the Econowives and the Marthas, who cook and keep house for the Commanders. Focusing on a woman known as Offred [read: Offred], FTP, name this novel set in the Republic of Gilead, written by Margaret Atwood.

Ans: The Handmaid's Tale

14. Along with Thomas Platt, this man resigned his Senate seat in protest at the appointment of a collector of customs of whom the senators did not approve. Believing that senators should control appointments in their states, this man also opposed the civil service reforms of President Hayes. A New Yorker and Radical Republican, he supported nominating Grant for a third term in 1880, leading to a split in the convention with the Half-Breeds. FTP, identify this man who, along with Chester Arthur, led the Stalwarts.

Ans: Roscoe Conkling

15. This man's analysis of Kapteyn's stellar data showed that the Milky Way rotates. His second constant is related to the local rotation rate, and his first constant is the local shear rate in differential Galactic rotation. His student van de Hulst predicted the 21-cm line, which this man detected with Muller. He predicted a shell of debris at about one light-year from the Sun based on observations of the inclinations and aphelia of long-period comets. FTP name this Dutch astronomer with a namesake comet cloud.

Ans: **Jan Hendrik Oort**

16. The second, known as the Broadshouldered, was killed in battle at age 15. The fourth was the illegitimate son of the third, and his reign began the medieval "golden age" of his country. The first, the son of Harald Fairhair, deposed his half-brother, Eric Bloodaxe, but failed to Christianize the country. The seventh defied the German-influenced Storting and refused to abdicate during World War II, fleeing to London to avoid the Nazis. FTP, identify the shared name of these kings of Norway.

Ans: **Haakon**

17. The turning point in this inventor's life came as a teenager when he bought some kitchen products wholesale and took them to Chicago's famous Maxwell Street. He yelled and hawked his wares, leaving with his pockets stuffed with cash. But wait, there's more! Over the past 40 years, his inventions have generated over \$1 billion in sales, mostly through his signature infomercials and his Ronco company. I'm practically giving you these ten points if you can name this inventor of Mr. Microphone and the spray-on toupee.

Ans: **Ron Popeil** (accept reasonable pronunciations)

18. In one play, she kills her servant Ftatateeta; in another, her attendants Iras and Charmian die after she commits suicide. In both plays she gets second billing in the title after men she was linked with romantically. In the first play, she is thrown into the harbor from the Pharos at Alexandria, after having herself delivered in a carpet. In the second play, Enobarbus says of her that "Age cannot wither her, nor custom stale her infinite variety." FTP name character paired with Caesar by Shaw and with Antony by Shakespeare.

Ans: **Cleopatra**

19. *The Fallen Caryatid Carrying its Stone* was originally intended for this large piece, which is topped by the *Three Shades*. The first sketches for it were influenced by the design of Ghiberti's doors for the Baptistery in Florence, while the inclusions of *Paolo and Francesca*, and *Ugolino*, were inspired by Dante's *Inferno*. FTP, name this large work by Rodin which includes *The Thinker*, but not the phrase "Abandon all hope, ye who enter here."

Ans: **The Gates of Hell** (accept **Rodin** before "this large piece")

20. It produces the same pattern if a setup is replaced by its conjugate, according to Babinet's principle. In the scalar theory of this phenomenon, the assumption of incoming spherical waves leads to the Fresnel-Kirchoff integral. If the projection screen is far away, the resulting pattern is the Fourier transform of the aperture function. The Airy disc and the Poisson spot are produced by it. Young's double-slit experiment showed that light is a wave by demonstrating, FTP, what bending of waves around obstacles?

Ans: **diffraction**

2004 Berkeley Late Spring
Stanford

1. FTPE, answer the following on an author and her works:

10) This author's works include *The Infinite Plan*, *Daughter of Fortune* and *Eva Luna*.

Ans: **Isabel Allende**

10) Allende's first novel, it evolved from a letter to her dying grandfather and chronicles the history of the Trueba clan, including the clairvoyant Clara del Valle.

Ans: **The House of the Spirits** or **La casa de los espíritus**

10) In this 1984 novel, Irene Beltran and Francisco Leal discover a mass grave of people tortured by the police. The title highlights the contrast between their affection for each other and the evil that they discover.

Ans: **Of Love and Shadows** or **De amor y de sombra**

2. FTPE, answer the following on a certain organism.

10) These creatures are the namesake of the Rh factor in blood types.

Ans: **rhesus monkeys** or **macaques**

10) An attempt to create a fluorescent green rhesus monkey resulted in the birth of ANDi, the first transgenic primate. ANDi had a gene taken from one of these cnidarians.

Ans: **jellyfish**

10) Rhesus monkeys were the subjects in this man's surrogate mother experiments.

Ans: **Harry Harlow**

3. Identify the following about a Russian uprising, FTPE.

10) This 1825 rebellion opposed the accession of the new czar. Both the Northern Society, led by Prince Sergey Trubetskoy, and the Chernigov regiment were quickly defeated.

Ans: **Decembrist Rebellion**

10) This brother of the deceased emperor was next in line to become emperor, but he had married a Polish woman and repeatedly renounced the throne. Nevertheless, the Decembrists continued to consider him the rightful heir.

Ans: **Constantine**

10) This younger brother of Constantine initially swore allegiance to him, but eventually accepted the throne when Constantine continued to refuse it. He put down the Decembrist Rebellion.

Ans: **Nicholas I**

4. Name these quantities that appear in the Friedmann equation FTPE.

10) This constant is 0 for a flat universe, +1 for spherical geometry and -1 for hyperbolic geometry.

Ans: **curvature constant**

10) This quantity is approximately one over the age of the Universe, and parametrizes the linear relationship between recession speed and proper distance.

Ans: **Hubble constant** or **parameter**

10) The Friedmann equation includes the energy density associated with this parameter, a constant that Einstein introduced to allow a static universe.

Ans: **cosmological constant**

5. Identify the following about architecture's most prestigious award, FTPE.

10) Sponsored by the Hyatt Foundation, this prize is given annually to one (or occasionally two) architects

Ans: **Pritzker Prize**

10) This Danish Architect won the 2003 prize, primarily for designing the Sydney Opera House

Ans: **Jorn Utzon**

10) This winner of the 1989 prize designed the Experience Music Project in Seattle and the Guggenheim Bilbao.

Ans: **Frank Owen Gehry**

6. Answer the following on Japanese literature, FTPE.

10) This novel transcribed anonymously in the 14th century describes the Taira family's defeat at the hands of the Minamoto, and takes its title from an alternate name for the Taira.

Ans: **The Tale of the Heike** or **Heike Monogatari**

10) This man wrote the stories "In a Grove" and "Rashomon." His name is given to Japan's most prestigious literary prize.

Ans: Akutagawa Ryunosuke

10) This Mishima tetralogy includes the novels *The Decay of the Angel* and *Spring Snow*.

Ans: The Sea of Fertility or Hojo no umi

7. Name these Hitchcock films featuring tennis players FTPE.

15) Tennis player Guy Haines meets the lunatic Bruno Antony, who suggests that they swap murders.

Ans: Strangers On A Train

15) Ex-pro tennis player Tony Wendice makes a perfect plot to have his wife Margot killed, but she kills her assailant with scissors after coming to answer Tony's phone call.

Ans: Dial M for Murder

8. Name the worm phylum from some of its classes FTPE. If you need some examples of its members, you will receive five points.

10) *Polychaeta*, *Oligochaeta*

5) leeches, earthworms

Ans: Annelida

10) *Cestoda*, *Monogenea*, *Turbellaria*

5) tapeworms, monogeneans, planarians

Ans: Platyhelminthes

10) *Anopla*, *Enopla*

5) ribbon worms

Ans: Nemertea or Nemertina

9. Answer the following on some religions, FTPE.

10) He preached his first sermon, "Setting in Motion the Wheel of the Law," in a deer park at Benares to the five Bhikkus.

Ans: Buddha or Siddhartha Gautama (accept either name)

10) This religion reveres the Acaranga Sutra, or Book of Good Conduct, as the first of their eleven major sacred texts. It lists the five great vows, including ahimsa, renouncing all killing of living things.

Ans: Jainism

10) Nataputta Vardhamana, known as Mahavira, and Siddhartha Gautama, later the Buddha, were both members of this caste of warriors.

Ans: kshatriya

10. Name these diagnostic properties of minerals from clues, FTPE.

10) This property is exhibited by minerals that do not display cleavage. Possible types include splintery and conchoidal.

Ans: fracture

10) This property is typically measured on the Mohs scale.

Ans: hardness

10) This property is the appearance of reflected light. Possible types include metallic, pearly, and vitreous.

Ans: luster

11. FTPE, name these immortalized sportsmen.

10) This longtime Laker scored 25,192 points in his career. The NBA's logo depicts him dribbling.

Ans: Jerry West

10) This Minnesota Twins slugger hit 573 career home-runs. It is believed that his silhouette is used in the current logo for Major League Baseball.

Ans: Harmon Killebrew

10) This standout for the 1934 New York University football team was the model for the Heisman Trophy, though one source says that he didn't learn it was him for 50 years.

Ans: Ed Smith

12. Mythological stuff, FTSNOP:

10) Hrimthurs built the walls around this realm, but he did not finish in time, and the gods escaped payment. It is connected to Midgard by the bridge Bifrost.

Ans: Asgard

5;5) The payment promised to Hrimthurs was a certain goddess's hand in marriage, and two objects. Name that sexy goddess for 5, and the two objects for another 5.

Ans: Freya; the sun and the moon (must name both the sun and the moon for the second 5)

10) Hrimthurs did not finish because this shape-shifting trickster assumed the form of a mare and distracted his workhorse.

Ans: Loki

13. Identify these American historians from works, FTPE:

10) *The Influence of Sea Power Upon History, 1660-1783*

Ans: Alfred Thayer Mahan

10) *The Age of Jackson; A Thousand Days: John F. Kennedy in the White House*

Ans: Arthur Meier Schlesinger, Jr.

10) *France and England in North America* (7 volumes), *The Oregon Trail*

Ans: Francis Parkman

14. 30-20-10 Identify the writer from works

30) *The Doctrine and Discipline of Divorce*, in which he argued that incompatibility (not just adultery) was a valid reason for a divorce. *The Tenure of Kings and Magistrates*, in which he stated that a king's authority may be revoked by the people if he becomes a tyrant.

20) The poem "On the Morning of Christ's Nativity," and the masque *Comus*.

10) The tragedy *Samson Agonistes*, the elegy *Lycidas*, and *Areopagitica*, a pamphlet supporting freedom of the press.

Ans: John Milton

15. Given a quote, name the Spanish leader for 15; if you need an easier clue you'll get 5.

15) "Our regime is based on bayonets and blood, not on hypocritical elections."

5) This Spanish general merged the other Nationalist parties with the Falange, becoming dictator after winning the Spanish Civil War.

Ans: Francisco Paulino Hermenegildo Teódulo Franco y Bahamonde Salgado Pardo

15) "I speak Spanish to God, Italian to women, French to men and German to my horse."

5) This son of Philip I and Joanna of Castile became the Holy Roman Emperor as well as the King of Spain. He was succeeded by his son Philip II.

Ans: Charles V or Charles I of Spain

16. Identify the following concerning phases, FTPE:

10) This rule relates the number of phases, components, and degrees of freedom in a system. It can be used to calculate the number of phases of matter than can be present in a system at equilibrium.

Ans: Gibbs' Phase Rule

10) When two audio samples are played slightly out of phase, this filter is the result. Its name comes from its distinctive amplitude response.

Ans: Comb Filter

10) This man classified phase transitions by the lowest derivative of the free energy with a discontinuity. His theorem states that expectation values in quantum mechanics obey Newton's second law.

Ans: Paul Ehrenfest

17. Answer these related questions FTPE.

10) In his book *Obedience to Authority: An Experimental View*, this man described his experiment in which participants were instructed to shock an actor.

Ans: Stanley Milgram

10) Milgram's experiment began one year after this Nazi's 1961 trial in Jerusalem, and was designed to test whether he might have really only followed orders, as he claimed.

Ans: Adolf Eichmann

10) She discussed the banality of evil in her book *Eichmann in Jerusalem*.

Ans: **Hannah Arendt**

18. Identify these African countries from leaders of the 1970's, FTPE:

10) Hastings Banda

Ans: **Malawi** (prompt on **Nyasaland**)

10) Gen. Gnassingbe Eyadema, Africa's longest-serving current head of state:

Ans: **Togo**

10) Julius Nyerere

Ans: **Tanzania**

19. FTPE, answer these questions on blackbody radiation.

10) This law relates the blackbody temperature and the wavelength at which a blackbody radiates the strongest.

Ans: **Wien's Displacement Law**

10) The cosmic microwave background radiation is nearly a perfect black body. To the nearest Kelvin, what is its blackbody temperature?

Ans: **3 Kelvin**

10) A blackbody is a perfect absorber at all wavelengths. This implies that it is also a perfect emitter at all wavelengths by this man's law, which equates absorptivity and emissivity at thermal equilibrium.

Ans: **Gustav Robert Kirchhoff**

20. FTPE, identify these plays given the names of their title characters and the years they were written:

10) Felix Unger and Oscar Madison, 1965

Ans: **The Odd Couple** (by Neil Simon)

10) Harpagon, 1669

Ans: **The Miser** or **L'Avare** (by Moliere)

10) Palamon and Arcite, circa 1612

Ans: **The Two Noble Kinsmen** (by Shakespeare and Fletcher)