## Packet by Harvey Mudd - Marc Davidson, Julian Evans, Andrew Hunter, Nikhil Sonde

Also Andrew Lim, Paul Lujan, Ray Luo
Oklahoma and David Moore

## Tossups:

1. This "seventh of a ton man" lived on West 35 th street in a comfortable brownstone. A native of Montenegro, he spied for the Austrians during the early stages of World War I, but joined the Serbian-Montengrin army and fought against the Austrians late in World War I. In his later years, he became rather reclusive and rarely left his home, where he grew orchids. For ten points, identify this man who along with Archie Goodwin, solves mysteries in A Right to Die and Triple Jeopardy as well as other novels by Rex Stout

## ANS: Nero Wolfe

2. It is the constant entropy derivative of enthalpy or constant temperature derivative of Gibbs energy with respect to pressure. Enthalpy divided by the product of its change and temperature gives the derivative of pressure with respect to temperature. When it's held constant, the heat capacity is equal to derivative of internal energy with respect to temperature, work is zero, nRT only depends on P, and the process is isochoric. FTP name this thermodynamic quantity measured in liters.

ANS: volume
3. The fastest way to get to it is to get off the metro at Monge, and some of the places in it where you can dine include the Artemis cafe and the famous Garden of Ivy restaurant, both on Mouffetard. Lying east of the Luxembourg Palace, it contains the abbey of St. Genevieve at Etienne du Mont. At the eastern side of Boulevard St. Michel, it lies south of the Ile de la cite and Notre Dame, and famously contains the Pantheon, though it's best known as the setting of La Boheme. FTP name this artsy neighborhood of Paris named for the language of instruction at its Sorbonne.

## ANS: Latin Quarter; or Quartier Latin

4. The first Ptolemy invited him to render his services in Egypt; the second exiled him. His successor, Zendodotos of Ephesos had served as Ptolemy II's boyhood tutor. His teacher, Theophrastus, declined an invitation to teach at the attached museum, even though many other scholars traveled to Egypt at the time. 72 Jews working for 72 days translated the Hebrew Bible into Greek under his oversight. FTP, name the first librarian of the Great Library of Alexandria who procured over 100,000 scrolls.

ANS: Demetrius of Phaleron
5. He could have saved Heracles and Prometheus a lot of trouble by not siring the Lerneaen Hydra and Ethon. His Egyptian counterpart is Set, who killed Osiris. His slaying draws parallels with the slaying of Vritra by Indra in Hindu mythology. According to Hesiod, he was the son of Gaia and Tartarus though Homer claims that he is a monstrous version of Hephaestus, born to Hera. FTP, name this giant, who was buried below Mt. Etna, and lends his name to cyclonic storms in the Indian Ocean.

ANS: Typhon or Typhoeus
6. The simplest kind of these are known as "jam-loaded," or SR, while "ones-catching" can be a problem with older versions of the JK type of this device. If you take a JK and tie the J to the complement of K, you get the most common type, the D type. Used for applications like switch debouncing, divide-by-two circuits, and binary counters, they can be most simply made by tying each output of a pair of NAND gates to an input of the other. FTP what are these ubiquitous digital circuit elements which, as their name implies, bounce between one of two output states?

## ANS: flip-flops

7. One hymn sung in this book is Isaac Watts' "On My Journey Home." Simeon Halliday hides George Harris in his Quaker compound, but he is later forced to leave along with his family with the help of friend Phineas Fletcher. The titular character left some of his cotton for Lucy, and once saved Little Eva from drowning. Ophelia tries to reform Topsy, a mischievous slave girl on the St. Clare plantation. FTP name this novel where Simon Legree beats and kills the title slave, by Harriet Beecher Stowe.

ANS: Uncle Tom's Cabin; or Life Among the Lowly
8. His drypoint needle etchings include La Petite Tombe and The Three Crosses, and he made drawings of The Eastern Gate at Rhenen and Nathan Admonishing David, done in reed pen. His did portraits for the Mennonite preacher Anslo and Jan Six, but is best remembered for self portraits, including one done before his death. With public commissions from the Surgeons Guild and Drapers' Guild, FTP name this Dutch artist who painted The Anatomy Lesson of Dr. Tulp, Supper at Emmaus, and The Night Watch.

## ANS: Rembrandt van Rijn

9. It is prevented by activity of NF-kappa-B, which is released by Akt upon activation by PI-3 kinase after the latter is promoted by the SHC adaptor that transduces track receptor tyrosine phosphorylation. Preceded by a transient increase in superoxides, this process is mediated by JNKs, DP5, and Bim, leading to formation of the Apaf-1 complex. Fas receptors select for cells to engage in it, and it is accomplished by release of inhibition on $\mathrm{Bcl}-2$, which allows Bax to translocate to the mitochondria to release cytochrome c , which induces caspase activity. Organelles remains intact until phagocytosis, unlike necrosis. FTP name this process of cell self-destruction.

ANS: apoptosis; or programmed cell death
10. The 2006 winner described a woman, who could make you stop eating burritos, convince you that there are heavenly hosts, and help you develop a taste for dirt and grave-digging, all without saying a word. The 2005 winner compared a woman's breasts to carburetors. Its entries tend to mimic the original in length, which inspired a spinoff contest, the "Little" version, which imposes a 25 -word limit on its sentences. Sponsored by the English Department of San Jose State University, FTP name this contest to write the worst possible opening line for a novel.

ANS: Bulwer-Lytton Fiction Contest (If the players are interested, the 2005 winner is "As he stared at her ample bosom, he daydreamed of the dual Stromberg carburetors in his vintage Triumph Spitfire, highly functional yet pleasingly formed, perched prominently on top of the intake manifold, aching for experienced hands, the small knurled caps of the oil dampeners begging to be inspected and adjusted as described in chapter seven of the shop manual.")
11. There is no break between its second and final movement but only a semitone drop from B major to B flat. The first movement is 20 minutes long and the piece itself lasts almost 40 minutes. According to Carl Czerny, who performed the piece for it's Austrian premier in 1812, the slow middle movement is based on an Austrian Pilgrim hymn. The composer never performed this work himself and the first public performance is most likely that of Friedrich Schneider on 28 November 181 in Leipzig. FTP name this Beethoven piece, his last piano concerto, commonly known by its monarchical moniker.

ANS: Piano Concerto No. 5 in E flat major ( accept "Emperor"), Op. 73
12. A unique geological feature on this body (although some may have also been observed on Miranda) are circular regions called "coronae," caused by the subsurface buildup of magma which creates a large distorting pressure on the surface, as there are no plate tectonics to alleviate this pressure. The largest crater here is known as Mead, and tectonic forces do exist, as they produced the Maxwell Mountains, the highest point on this body, located on the Ishtar continent. First explored by the Mariner 2 flyby, FTP what is this planet, where an atmosphere of $96 \%$ carbon dioxide contributes to surface temperatures in excess of 700 Kelvin?

## ANS: Venus

13. At age 14, he left home to go work on the railroads, and 5 years later, started the Brotherhood of Locomotive Firemen. He organized the American Railway Union, which in 1894 held one of the first successful strikes. While in jail, he read Karl Marx and became a socialist, so that when he was released in 1895, he began his political career. After a quarrel, he split with the Industrial Workers of the World in 1908. FTP, name this man sent to jail for interfering with the mail system during the Pullman strike, and later repeated candidate for President.

## ANS: Eugene V. Debs

14. The name's the same. The Indian reservation here is home to an Ojibwe tribe and Grand Casino, run by the tribe. The lake is 42 feet deep and is a prime fishing spot. Visitors to the lake hoping for good fishing will may be heartened by the giant Walleye statue that greets them. Archaeological finds indicate that the area around the lake is one of the earliest settlements in Minnesotan history. It is also an extremely popular vacation spot as the second largest lake in Minnesota. FTP, name this lake and Indian reservation.

ANS: Lake Mille Lacs (pronounced mill-LAX) (Excise)
15. Carlo Goldoni adapted this play for his 1747 work I due gemelli veneziani. (Needs substantial rewrite)makes good use of Roman stock characters, for example the comic courtesan and the quack doctor. In the play, Sosicles and his brother get separated, Sosicles begins living in Epidamnus and is renamed after his brother. Hilarity ensues as Sosicles is renamed after his brother and they are then reunited. FTP, name this Plautus play upon which Shakespeare based his Comedy of Errors.

ANS: The Twin Menaechmi (Latin Menaechmi; accept any answer with Menaech- as a stem)
16. A contralto voice in court, she wouldn't marry Courtenay, earl of Devon, and was once betrothed to Holy Roman Emperor Charles V. She lost Calais in a war against France and suppressed the rebellion of Thomas Wyatt. She fled to Norfolk after the death of his brother Edward VI, and was proclaimed queen after Jane Grey was forced out. Daughter of Catherine of Aragon, FTP name this Catholic monarch, the wife of Philip II, whose persecution of Protestants earned her the nickname "bloody."

ANS: Mary I; or Mary Tudor
17. In one of this writer's short stories, Lowell Schmaltz discusses his anything but intimate acquaintance with an American president. That story, The Man Who Knew Coolidge was eventually expanded to a novel-length collection of Schmaltz's monologues. Earlier novels by this American author include The Trail of the Hawk and Our Mr. Wrenn, both written to prevailing tastes, but latter works like It Can't Happen Here and Kingsblood Royal displayed his satiric nature and leftist politics, as did earlier works like Elmer Gantry and Arrowsmith. FTP, who is this author, best known for recreating his hometown in Main Street?

ANS: Sinclair Lewis
18. This man made the argument against evolution that Darwin himself acknowledged as the most credible evidence against it. Through a Black Body Radiation calculation, he argued that the universe is only 1 million years old and thus such a slow process as evolution could not occur. However he is more famous for his work in thermodynamics and fluid mechanics. For ten points name this Lord who developed a theory of circulation and whose namesake temperature scale is the absolute version of the Celsius scale.

ANS: William Thomas, Lord Kelvin
19. The tail of the Pink Panther that appears on the back of his helmet is the only remaining sign of his days with his former franchise, the second of three stops in the NHL. Born in the same Montreal suburb as fellow Team Canada netminder Martin Brodeur, he was the 4th overall pick of the New York Islanders in 1997 draft, but was traded to the Florida Panthers in 2000. FTP name this elite goaltender, traded from Florida to the Vancouver Canucks for Todd Bertuzzi in 2006.

## ANS: Roberto Luongo

20. Stemming from an incident on board the ship Rebecca, this war lasted from 1739 to 1748 . Occurring predominantly in the Caribbean between the English and Spanish during the war of Austrian Succession this war saw the British attack Spanish mining facilities at Puerto Bello and besiege Cartagena. For ten points identify this war named after the captain of the Rebecca's supposedly severed body part.

ANS: War of Jenkin's Ear (needs rewrite)
21. He studied Wilhelm Jensen's Gradiva as part of his theory of the psychodynamics of the creation of art. He wrote a biography of Woodrow Wilson with William Bullitt and explained social organization using the work of Gustave Le Bon. He fled to England and finished his last work on the death of a religious leader that led to merging of two prophets due to guilt, a historical novel focused on the Jews titled Moses and Monotheism. FTP name this psychologist who described sublimation in Three Essays and wrote Beyond the Pleasure Principle, the originator of The Ego and the $I d$.

## ANS: Sigmund Freud

22. This novel is a story told by the narrator with very little input from those listening to it. T. S. Eliot referenced it in his 1927 poem The Hollow Men. Along his path, the narrator met such characters as the mottled harlequin and the woman who threw her bare arms up. The only characters the narrator truly respected were the cannibals, for they respected the narrator and did not eat each other before him. FTP, name this novella, in which Marlowe travels up the Congo river.

## ANS: Heart of Darkness

23. Warning: two answers required. They created the island Onogoro by churning the sea with a halberd after being charged with the task of creating the first land. After circling the pillar Amenomihashira in order to mate, she spoke first, which caused their first children to be misshapen. When she died, he went to Yomi to retrieve her, only for his attempt to end in a quarrel resulting in her vowing to kill 1,000 people everyday, to which he replied that he would give life to 1,500 to spite her. FTP, name these people with similar sounding names, the first man and woman created in Japanese mythology.

ANS: Izanagi and Izanami (any order)


## Bonuses

1. Name these physical features of Chile. FTPE.
(10) Bound by the Andes to the east, this desert receives cold air from the Humboldt current, and lies just north of

Antofagasta in one of the driest places in the world.
ANS: Atacama desert
(10) This, Chile's longest river, runs through the desert in a $U$ shape.

ANS: Rio Loa
(10) Lying just east of the Chilean border and the Valparaiso region is this mountain peak in Argentina first ascented by Matthias Zurbriggen.

## ANS: Aconcagua

2. Commissioner Happy Chandler, who grew up in the segregated South, once told Joe Morgan that he could not keep this man in the minors because otherwise, he would not be able to face the Lord. FTPE.
(10) Name this baseball player who came up as a first baseman for the Brooklyn Dodgers after being signed by Branch Rickey.
ANS: Jack Roosevelt "Jackie" Robinson
(10) Robinson stole home in the 8th inning of game one of this World Series with the Dodgers trailing 6-4. It's the only championship for the Dodgers in Brooklyn.
ANS: $19 \underline{55}$
(10) In trying to get to a meet in Pomona, Robinson once got a tire from the dean of students after his friend blew out his, and got to the track on time with no warm up to set a record in the long jump for this school, which he attended before UCLA.
ANS: Pasadena Junior College
3. Answer the following related to a certain class of vertebrate animals, F10PE.
(10) This class, which includes the salamanders and newts, takes its name from the Greek for "dual life".

## ANS: Amphibians or Amphibia

(10) One order of the class Amphibia is this one, which includes the frogs and toads. Its name comes from the distinct absence of tails in adults, distinguishing them from other members of the class.

## ANS: Anura

(10) A third extant-order of amphibians exist in the form of these animals, which resemble worms or snakes and belong to the order Gymnophiona. Generally, they are found underground in tropical regions.

## ANS: Caecillians

4. Name these terms from European sport fencing FTPE.
(10) In foil and saber, to score touches, you need to have this, obtained by being the first to initiate attack or the last to successfully defend

## ANS: Priority or right of way

(10) Of course, if your opponent has priority, it's still possible to score in some cases. For example, if he hesitates, or isn't threatening you directly, you can make one of these.
ANS: attack into (or in or on) preparation
(10) In epee, there isn't any priority-instead, the first person to make a touch scores. This means that epee is the only place where a simultaneous attack from both sides can result in this.
ANS: double touch
5. Name these prominent figures in the Six Day War. FTPE.
(10) This Egyptian leader sought to gain leadership of the Arab world with a military buildup against Israel, but he got a preemptive strike and a humiliating defeat instead.
ANS: Gamal Abdel Nasser
(10) This eyepatched Israeli general maneuvered himself into the position of Defense Minister prior to the war; his strategy of facing one enemy at a time combined with his secretive ways confused and angered the Israeli cabinet but proved successful.
ANS: Moshe Davan
(10) The Chief of the Israeli General Staff in 1967, he later became Prime Minister and negotiated the Oslo Accords before being assassinated by a Jewish fanatic in 1995.

## ANS: Yitzhak Rabin

6. 30-20-10: Name the Author from Works.
(30) When you come, Woman Work
(20) Million Man March Poem, All Gods Children Need Travelling Shoes
(10) I know why the caged bird sings, Gather together in my Name

ANS: Maya Angelou
7. . F10PE, identify each of the following peoples of Mesoamerica.
(10) Based at their capital of Tula, this people flourished from the $10^{\text {th }}-12^{\text {th }}$ Centuries. They exerted influence over the Huasteca region and Chichimec Desert and are famed for the tall statue-like columns, Atlanteans.
ANS: Toltecs or Tolteca
(10) This Aztec people, led by their legendary ruler Xolotl, arrived in the Valley of Mexico in the $12^{\text {th }}$ Century and established an empire which lasted until a namesake war with the Mexica overthrew them.
ANS: Tepanecs or Tepaneca
(10) Centered at San Lorenzo and La Venta, this early Mesoamerican people built the first monumental sites along the east coast of the Isthmus of Tehuantepec and are best known for their large stone heads.
ANS: Olmecs or Olmeca
8. Given a country, name its official language that isn't English FTPE.
(10) Philippines

ANS: Tagalog
(10) Mauritius

ANS: French
(10) Malta

ANS: Maltese
9. Name these short-lived US political parties from presidential candidates, FTPE.
(10) Martin van Buren; John P. Hale

ANS: Free Soil Party
(10) Strom Thurmond

ANS: State's Rights Democratic Party (accept Dixiecrats)
(10) Peter Cooper; James Baird Weaver

ANS: Greenback Party
10. Novels by Robert Louis Stevenson. FTPE.
(10) Followed by by Catriona, it follows the adventures of David Balfour aboard the Covenant, his shipwreck, and subsequent falling in with Jacobite Alan Breck.
ANS: Kidnapped
(10) The murder of Sir Danvers Carew is pinned on a doctor who transforms himself into a mad man in order to release his evil urges, as related by Mr. Utterson.
ANS: The Strange Case of Dr. Jekpll and Mr. Hyde
(10) Left incomplete at Stevenson's death, it deals of the love of the titular Archie, who is sentenced to death by his own father only to be rescued by Christina.
ANS: Weir of Hermiston
11. Answer the following about protein moieties (MOY-uh-tees) FTPE
(10) Moieties are the basic units within this level of protein structure.

ANS: Supersecondary Structure
(10) This moiety consists of an alpha helix and a beta-sheet associated with a metal. It is often used for binding to the major groove of DNA.
ANS: Zinc Finger
(10) This moiety consists of two pairs of associated beta sheets and shares it name with a symbol from Classical
pottery
ANS: Greek Kev
12. Troy Maxson and his son Cory clash over jobs, sports, and marriage. Answer the following questions FTPE.
(10) Name this play, the 6 th in a 10 -part series, which examines racism in the 1950 s .

## ANS: Fences

(10) Name the Pulitzer prize winning author of Fences, who also wrote Joe Turner's Come and Gone ANS: August Wilson
(10) Wilson won his second Pulitzer Prize in 1990 with this play, chronicling the Black experience in the 1930s.

ANS: The Piano Lesson
13. Name these people associated with early photography FTPE:
(10) This man produced the first photograph.

ANS: Joseph Nicephore Niepce
(10) These men invented the first color film, Autochrome, in 1907.

ANS: The Lumiere Brothers
(10) This man developed the first film that replaced photographic plates.

ANS: George Eastman Kodak (check this fact)
14. Name these characters from the Indian epic, The Mahabharata FTPE:
(10) The most skilled of the Pandavas and the main protagonist of the epic.

## ANS: Arjuna

(10) The teacher of the Pandavas and Kauravas.

ANS: Drona or Dronacharya
(10) Karna's brahmin teacher who cursed him for concealing his true caste.

ANS: Parshurama
15. Answer these questions about the solution of Schrodinger's equation for the hydrogen atom. FTPE.
(10) If $n$ is the principal quantum number of a state, the energy of that state is proportional to what quantity?

ANS: $\quad \underline{1 / n^{2}}$ ( $n$ squared)
(10) The expectation value of the distance of the electron from the nucleus in the ground state is equal to this quantity. ANS: Bohr radius
(10) The solution for the radial wave function is normally expressed in terms of these polynomials, which can be defined by the Rodrigues formula.
ANS: associated Laguerre polynomials
16. In addition to 1 enantiomer, each stereoisomer of 2-bromo-3-chlorobutane has 2 of these obtained by changing 1 of the 2 stereocenters from R to S or S to R . FTPE.
(10) Unlike enantiomers, they have different chemical properties, and can be separated by fractional distillation and chromatography. Name these stereoisomers that are not related as mirror images, e.g. cis and trans isomers in cycloalkanes.
ANS: diastereomers
(10) The staggered Newman projection of 2-bromo-3-chlorobutane can be converted to this type of projection by rotating the molecule to form an eclipsed rotamer, with horizontal lines representing bonds coming out of the page.
ANS: Fischer projection
(10) A compound with 2 different stereocenters like 2-bromo-3-chlorobutane have a total of 4 stereoisomers. How many stereoisomers does a compound with n different stereocenters have?
ANS: $\underline{\underline{\mathbf{2}^{\wedge}} \mathbf{n}}$
17. Herman Melville works. F15PE.
(10) Jack Chase and Captain Claret are characters in this work about the inhumane treatment of sailors, in which a symbolic garment sinks into the sea.
ANS: White Jacket; or The World in a Man-of-War
(10) The titular American meets Benjamin Franklin, John Paul Jones, and Ethan Allen at the battle of Bunker Hill,
then gets taken by the English for a long time.
ANS: Israel Potter; or Fifty Years of Exile
18. Composers love to die in Vienna. Given a composer's birthplace and birthdate, name the composer for 15 points. 10 if you need a famous work.
(15) Rohrau, Austria - March 31, 1732
(10) Symphony No. 45 in F-sharp minor or the "Farewell" symphony

ANS: Joseph Havdn
(15) Salzburg, Austria - January 27, 1756
(10) The Marriage of Figaro

ANS: Wolfgang Amadeus Mozart
19. Name the book from characters, FTPE. 5 if you need the author.
(10) Mustapha Mond; Bernard Marx.
(5) Aldous Huxley

ANS: Brave New World
(10) Dr. Aziz; Adela Quested
(5) E. M. Forster

ANS: A Passage to India
(10) Gibreel Farishta and Saladin Chamcha
(5) Salman Rushdie

ANS: The Satanic Verses
20. Test your crypto knowledge FTPE. (get rid of it)
(10) This simple cipher is named after one of its most famous users. Mathematically, it applies a permutation to the alphabet.
ANS: Caesar cipher
(10) Alternating between a set of different Caesar ciphers based on the letters of a keyword creates this much stronger cipher, first broken by Babbage.
ANS: Vigenere cipher
(10) Increase the length of the keyword to the length of the message, and create unique keywords for each message, and you'll get this, the strongest cipher mathematically possible
ANS: One-time pad

