ROUND 4
1st Caltech Invitational 1996
Questions by Arizona State
TOSS-UPS
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1. Also called phylloquinone, this fat-soluble vitamin is normally synthesized by bacteria in the digestive tract, but large doses of antibiotics can cause a temporary deficiency. For ten points, what is this vitamin which is essential to the production of prothrombin and whose deficiency leads to slow blood clotting?

ANSWER: Vitamin _K_
2. This group of people may have originated from the Hsiung-nu in China; troubles with the emperors of the Han dynasty might have caused them to migrate westward. Ammianus described them around 395 A.D. as primitive pastoralists who knew nothing of agriculture, with no settled homes and no kings. That changed in about half a century. FTP, name this group of people who invaded Gaul and Italy under the leadership of Attila.

ANSWER: _HUNS_
3. Born in 1896, he began his academic career in invertebrate biology, publishing his first paper at age ten and receiving his PhD at age twenty-one. He soon became interested in human development and applied biological principles to childhood cognitive development, proposing the sensorimotor, preoperational, concrete operational and formal operational stages. FTP, identify this Swiss child psychologist.

ANSWER: Jean _PIAGET_
4. Arrested for writing a letter in which he criticized Joseph Stalin, he spent eight years in prison and labor camps and was later exiled from the Soviet Union from 1974 until 1990. FTP, name this author of _The First Circle_, _Cancer Ward_, _August 1914_, and _A Day in the Life of Ivan Denisovich_, winner of the 1970 Nobel Prize for Literature.

ANSWER: Aleksandr _SOLZHENITSYN_
5. She is said to have died giving birth on Cyprus. Though accounts differ, it is said that she was carried to Naxos by Theseus and was left there to marry Dionysus. FTP, name this daughter of Pasiphae and the Cretan King Minos, who helped Theseus escape from the Labyrinth after his defeat of the Minotaur.

ANSWER: _ARIADNE_
6. Chief Justice Wiliam Rehnquist has agreed to hear his case, serving on a three-judge panel. This seems unusual, as he was not a citizen of the U.S. at the time of his death -- in 1485. FTP, give the name of this suspect to be tried in the deaths of his two nephews, which
cemented his claim, briefly, to the throne of England in 1483.
ANSWER: _RICHARD III_ (Plantagenet, Duke of Gloucester)
7. Both the father and the son were associated with wars, the father with the Seven Years' War and the American Revolution, the son with the protracted war with France. What, for ten points, was the common last name of this only father-son team in the British prime ministership?

ANSWER: William _PITT_
8. "How I want a drink -- alcoholic, of course -- after the heavy chapters involving quantum mechanics". So said Sir James Jeans, not as a lament, but as a mnemonic to remember the first fifteen digits of, FTP, what transcendental number that can have you running in circles?

ANSWER: _PI_ (3.14159265358979)
9. Its official name is 2,2-dichlorodiethylsulphide (die-KLOR-o-die-eth-ell-SULL-fide). It is a light-yellow, oily liquid which becomes a gas at above 14 degrees Centigrade, acting as a powerful producer of blisters on the skin, eyes and lungs. FTP, what is the poison gas that was first used at Ypres by the Germans in July 1917?

ANSWER: _MUSTARD GAS_
10. The winner of the Akutagawa Prize for _The Catch_, this novelist gained international prestige for writing about disillusionment and rebellion of the post World War II generation. His first novel was "The Lavish and the Dead," and other works include "Nip the Buds, Shoot the Kids," "A Personal Matter," and "Awake, New Man." FTP, name this Japenese novelist who was awarded the Nobel Prize for Literature in 1994.

ANSWER: Kenzaburo _OE_ (or reversed)
11. When calculating this economic variable, fixed costs are not allocated to the unit. A common example is the discounting of airplane seats, because once the fixed costs are paid you only have to pay for drinks and food for the rest of the seats. FTP, what is this economic term for the cost of producing one extra unit?

ANSWER: _MARGINAL COST_
12. Harry Stuhlduher, Don Miller, Jim Crowley, and Elmer Layden played for Notre Dame in the 20's. You may not be impressed, but sportswriter Grantland Rice was -- so impressed that he dubbed them, FTP, what?

## ANSWER: The _FOUR HORSEMEN_

13. He's rather uncreative -- some unknown evil attacks the hero and his female companion in southern California. Together they defeat
their enemy, who turns out to be rather human after all. FTP, this is the plot to every novel by this mega-selling horror writer, author of "Strangers," "Watchers," "Lightning," "The Bad Place," "Hideaway," "Cold Fire," "Midnight," and countless others.

ANSWER: Dean R. _KOONTZ_
14. He is reported to have beaten a Franciscan friar, and there is a deed by Cecily Chaumpaigne releasing him from legal action: "both of my rape and of any other matter or cause." A diplomat under Edward III and Richard II, he is more famous for work paid for with a royal grant of a yearly allowance of wine. FTP, name this English author born in 1340, best-known for "The Canterbury Tales."

ANSWER: Geoffery _CHAUCER_
15. He started out as a shopkeeper, but had little success, and turned to physics and glassblowing. Using these skills, he started to make thermometers that initially used alcohol. FTP, name this man whose temperature scale has the freezing point of water at 32 degrees.

ANSWER: Gabriel Daniel _FAHRENHEIT_
16. This composer was stung by Parisian criticism that he didn't know his Shakespeare, and replied that "I have had him in my hands from my earliest youth, and I have read and re-read him constantly." His great project, an attempt to make an opera out of King Lear, was never completed. FTP name this composer of Macbeth, Falstaff and Otello.

ANSWER: Giuseppe _VERDI_
17. Graham Land, Palmer Land, Dronning Maud Land, Byrd Land, Queen Mary Land, Ellsworth Land, Wilkes Land, MacRoberson Land, Coates Land. These "lands" are political divisions on, for ten points, what continent whose exploration and exploitation is guided under the Treaty of $1959 ?$

ANSWER: _ANTARCTICA_
18. They claim a great migration beginning about 1150 A.D. and culminating in the arrival of a "great fleet" in the 14th century from Hawaiki. They fought two Taranaki Wars, a Waikato War, and a war known to them as "te riri pakeha", or "the white man's anger", from 1860-1872. FTP, name these indigenous inhabitants of New Zealand.

ANSWER: _MAORI_
19. The soft and medium varieties of this personal item are readily available, but the firm variety is hard to find. Originally, Siberian hog bristles were used, but with the advent of nylon, which stayed firmer and did not spoil, nylon bristles relaced the hog hair. FTP, what is this item that dentists recommend you use after every meal?

ANSWER: a_TOOTHBRUSH_
20. Discovered in 1750 by Thomas Walker, it is named for a son of George II of England. FTP, name this natural pass of elevation 1640 feet between Kentucky and Tennessee through which Daniel Boone blazed the Wilderness Road.

ANSWER: _CUMBERLAND GAP_ *
21. Note that we are not looking for a person's name. "The Ox-Bow," "Kindred Spirits," and "The Course of Empire" are works by members of this school of art whose members include most notably Doughty, Durand, and Cole. FTP, name this landscape school which dominated American painting in the mid-19th century.

ANSWER: _HUDSON RIVER_School
22. They have abandoned their initial efforts, code-named Copland, to overhaul an existing operating system and will instead build one from scratch, to be due in 1998. FTP, name this company led by Gilbert Amelio which promises its new OS will look nothing like the one which runs its Macintosh line.

ANSWER: _APPLE_ Computer
23. He is often shown in artwork as a decapitated, but living, person. Sent to Gaul by the Roman emperor Decius to convert the population, he was later executed, as legend has it, at Montmartre. FTP, who is this martyr, canonized and made the patron saint of France?

ANSWER: Saint _DENIS_ (alt: _DIONYSIUS_ in Latin)
24. Five years ago, she sang background vocals on an album by the rapper Overweight Pooch. An A\&M label scout took notice, and signed this 1989 Miss Black Arizona to the label. FTP, name this singer whose 1992 album "Finally" spawned the single "We Got a Love Thang," and whose newest album is 1996's "Moving On."

ANSWER: CeCe_PENISTON_
25. For a quick ten points, what is, to the nearest nautical mile, the equatorial circumference of the earth? It may help to know that a nautical mile is the distance of one minute of arc at the equator.

ANSWER: _21,600_ nautical miles
26. In the early 1870s, he came to the conclusion he could write better and live more cheaply abroad, so he left for Paris in 1875, the same year he published "Roderick Hudson." FTP, name this Bostonian who finally settled in England and wrote such works as "The Wings of the Dove," "The Bostonians," "The Portrait of a Lady," and "Daisy Miller."

ANSWER: Henry _JAMES_

ROUND 4
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Questions by Arizona State
BONUSES (all worth 30 points)

1. Name these people associated with the Louisiana Purchase for 10 points each.
A. He was Jefferson's Secretary of State and directed the negotiations for the purchase.

ANSWER: James _MADISON_
B. He lead a slave rebellion in Santo Domingo whose success lead to Napoleon's decision to sell Louisiana.

ANSWER: Toussiant _L'OUVERTURE_
C. He was the explorer who originally claimed Louisiana for France on April 6, 1682.

Sieur de _LA SALLE_ or Rene Robert _CAVELIER_
2. Name these scientists involved in the discovery of DNA for the stated number of points.
A. 5: these two used physical models to determine the structure of DNA.

ANSWER: James _WATSON_ and Francis _CRICK_
B. 10: these two used bacteriophages to determine that it was DNA, not proteins, that were passed from a phage to a bacteria.

ANSWER: Alfred _HERSHEY_ and Martha _CHASE_
C. 15: he determined that the amounts of adenine and thymine were equal and that the amounts of guanine and cytosine were equal in DNA.

ANSWER: Erwin _CHARGAFF_
3. Identify the following authors of self-help books for ten points each.
A. I'm Dysfunctional, You're Dysfunctional

ANSWER: Wendy _KAMINER_
B. What Color is Your Parachute?

ANSWER: Richard Nelson _BOLLES_
C. Men are From Mars, Women are From Venus

ANSWER: John _GRAY_
4. Identify the French poets for ten points each.
A. This poet spent time in Ethiopia living as a poor native and had a long time friendship with Paul Verlaine. Name this author of "The Drunken Boat", "A Season in Hell" and "Illuminations".

ANSWER: Arthur _RIMBAUD_
B. A lawyer by training, he began his career as an official in the Academie Francaise. His works include "Bluebeard", "Puss in Boots", "Little Red Hiding Hood" and "Mother Goose".

ANSWER: Charles _PERRAULT_
C. This poet enjoyed publishing mathematical and scientific papers on physics more than poetic works. Name this author of "Cahiers", "Mr. Head", and "Charmes ou poemes", whose greatest poem is considered to be "The Young Fate".

ANSWER: Paul _VALERY_
5. Name the following figures in Norse Mythology for the stated number of points.
A. For 5: This promoter of marriage and fertility was wife to Odin and mother of Balder.

ANSWER: _FRIGG_or _FRIGGA_
B. Loki and the giantess Angurboda had three children. In the next three questions, you will name them. First, For 5 : name their daughter, the goddess of the underworld

ANSWER: _HEL_ or _HELA_
C. For 10: This wolf will devour the sun at Ragnarok.

ANSWER: _FENRIR_or _FENRISULFR_or _FENRIS_Wolf
D: For 10: Also known as the Midgard Serpent, the world-spanning snake had a long-running feud with Thor.

ANSWER: _JORMUNGANDR_or _IORMUNGANDR_
6.
A. Joining the Praetorian Guard at the accession of Tiberius as Emperor of Rome, as prefect he gained the Emperor's favor. However, he was later implicated in a plot to overthrow and succeed him. For 15 points, name this man, who rose to the position of consul in 31 A.D., whose arrest and execution resulted in a reign of terror against his allies.

ANSWER: Lucius Aelius _SEJANUS_
B. For an additional 15 points, identify the name shared by the grandmother and mother of Nero; the grandmother came under attack after Sejanus killed the probable heir Drusus Caesar in 23 A.D.

ANSWER: _AGRIPPINA_
7. Nancy Reagan testified to Congress last March about the Clinton Administration's handling of the War on Drugs. As a result, the drug czar was replaced. For 15 points each:
A. What 4-star general, a Gulf War veteran, is now the drug czar?

ANSWER: General Bruce _MCCAFFREY_
B. And what former New York City police commissioner did he replace?

ANSWER: Lee _BROWN_
8. Name the famous American woman, 30-20-10.

30: Born in 1943 in China to missionaries, she spent most of her first year of life in a Japanese prison camp.

20: As a federal employee, she recently spent 27 weeks on the property of another major power.

10: This foreign property was the Mir space station.
ANSWER: Shannon _LUCID_
9. Answer the following questions about German beer for the stated number of points.
A. 5: What is the name for the category of beers which implement a bottom-fermenting yeast, so that the beer can be brewed at cooler temperatures than an ale?

ANSWER: _LAGER_
B. 10: What is the name given to the heavier, Munich-style beers, often represented by a goat, as the German word is the same for both?

ANSWER: _BOCK_
C. 15: What is the name of the 1516 law passed in Bavaria that restricted the ingredients used in making beer to hops, yeast, and barley.

ANSWER: The _REINHEITSGEBOT_
10. Identify these types of isomers for 10 points each.'
A. They differ in the order in which atoms are bonded together.

ANSWER: _STRUCTURAL_ isomers or _CONSTITUTIONAL_ isomers
B. They differ in the orientation of the atoms in space.

ANSWER: _STEREOISOMERS_ or _CONFIGURATIONAL_ isomers
C. They have a mirror image and are a special class of stereoisomers.

ANSWER: _ENANTIOMERS_ or _OPTICAL_ isomers
11. Identify this novelist and diplomat on a $30-20-10$ basis.

30: A student of law and writer of the collection of stories "The Masked Days," he became a member of his country's delegation to the International Labour Organization in Geneva from 1950-52. From 1975-77, he also served as Ambassador to France.

20: This Latin American's first novel was "Where the Air is Clear" which gained him international prestige.

10: His most recent work was 1992's "The Buried Mirror" which was a book-length essay on Hispanic cultures and was simultaneously published in both Spanish and English.

ANSWER: Carlos _FUENTES_
12. Some musicians are famous for their nicknames. For the stated number of points, identify the following people given their nicknames.
A. 5: The First Lady of Jazz

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\begin{aligned}
& \text { ANSWER: Ella _FITZGERALD_- } \\
& \text { ANSWER: Scott _JOPLIN_ } \\
& \text { ANSWER: Bessie_SMITH__ } \\
& \text { ANSWER: Charlie_PARKER_ }
\end{aligned}
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13. Answer these questions of Russian geography for ten points each.
A. Name the largest lake in Europe, located northeast of St. Petersburg and extending almost to Finland.

ANSWER: Lake _LADOGA_
B. Identify the river flowing from Lake Ladoga through St. Petersburg which plays a part in Prokofiev's cantata "Alexander Nevsky."

ANSWER:_NEVA_
C. What gulf of the Baltic Sea does the Neva empty into?

ANSWER: Gulf of _FINLAND_
14. The Internet Movie Database recently had a list of the top 250 movies of all time, according to a large straw poll. Identify these top ten movies for 10 points each.
A. This 1994 movie stars Tim Robbins and Morgan Freeman as Andrew Dufresne and Ellis Boyd "Red" Redding.

ANSWER: _THE SHAWSHANK REDEMPTION_
B. From 1995, it stars Gabriel Byrne and Chazz Palminteri among others. Characters include a mysterious Hungarian kingpin.

ANSWER: _THE USUAL SUSPECTS_
C. Name either the 1993 or 1995 animated movies about the loveable duo of Wallace and Gromit, who were first introduced in _A Grand Day Out._

ANSWER: _THE WRONG TROUSERS_or _A CLOSE SHAVE_
15. The Triple Crown races should be well-known to you. But how about their floral nicknames?
A. 5: the Kentucky Derby is "The Run for the..." what?

ANSWER: _ROSES_
B. 10: the Belmont Stakes is "The Run for" these flowers also known as grenadine or clove pink.

ANSWER: _CARNATIONS_
C. 15: the Preakness is "The Run for" these coneflowers of the genus ratibada.

ANSWER: _BLACK-EYED SUSANS_
16. Answer these related geographical questions for ten points each.
A. This lake, which shares its name with a country, is the only freshwater lake in the world with sharks, swordfish, and tarpon.

ANSWER: Lake _NICARAGUA_
B. The Gulf of Fonseca is bounded on the southeast by Nicaragua. All or nothing, identify the two other countries which bound this gulf of the Pacific Ocean.

ANSWER: _EL SALVADOR_ and _HONDURAS_
C. This coastal lowland region of Honduras and Nicaragua is named for the Indians who inhabit the region.

ANSWER: _MOSQUITO_ or _MISKITO_Coast
17. Identify these monarchs from the House of Stuart for 10 points each.
A. The first monarch to hold the throne after the monarchy was restored by Parliament.

ANSWER: _CHARLES II_
B. This monarch was beheaded by Parliament.

ANSWER: _CHARLES I_
C. This monarch was the last from the House of Stuart.

ANSWER: _ANNE_
18. If you add up the mass of all the visible matter in the universe, you find it is significantly less than the mass of the universe deduced from other methods, such as observing the motions of stars and galaxies. Answer the following questions about this phenomenon for 10 points each.
A. First, give the general name for the nonluminous substance that comprises this missing mass.

ANSWER: _DARK MATTER_
B. Some (but not all) of the dark matter is probably tied up in brown dwarfs, which are halfway between stars and planets, and are too faint to see. What is the clever cosmologists' name for this sort of dark matter?

ANSWER: _MASSIVE COMPACT HALO OBJECT_ or _MACHO_
C. If there is just enough dark matter, the universe's expansion will get slower and slower, asymptotically approaching zero, but never actually stopping. What is the name for this type of universe, lying on the border between an open and a closed universe?

ANSWER: _FLAT_
19. Answer these questions about Japanese politics for ten points each.
A. This current Prime Minister formed a minority government after recent elections.

ANSWER: Ryutaro _HASHIMOTO_
B. Hashimoto is the leader of this long-time leading political party of Japan.

ANSWER: _L_iberal _D_emocratic _P_arty
C. This leader of the Social Democrats is the most powerful female politician in Japan.

ANSWER: Takako _DOI_
20. Identify these dramatists for 10 points each.
A. He wrote "A View from the Bridge" and "A Memory of Two Mondays," as well as the screenplay for _The Misfits,_ starring Marilyn Monroe.

ANSWER: Arthur _MILLER_
B. He wrote "The Moon of the Caribees," "The Hairy Ape," "Gold," and "Strange Interlude"

ANSWER: Eugene _O'NEILL_
C. This Group Theater member wrote "Golden Boy," "Paradise Lost" and "Waiting for Lefty"

ANSWER: Clifford _ODETS_
21. When a country has the phrase 'Islamic republic' built into its name, you have a good idea of what the majority religion is. Not every country makes it so easy. You can have ten points apiece for giving the majority faith in each of the following countries:
A. Latvia

ANSWER: _LUTHERAN_ (prompt on 'Christian' or Protestant')
B. Myanmar

ANSWER: _BUDDHIST_
C. Nepal.

ANSWER: _HINDU_
22. Identify these Italian painters with nicknames that begin with "C" for 10 points each.
A. This Venetian who lived from 1697 to 1768 is most famous for his detailed landscape views of London and Venice.

ANSWER: _CANALETTO_ or Giovanni Antonio _CANAL_
B. Living from circa1571 to 1610, this master of tenebrism created "The Conversion of St. Paul" and "Death of the Virgin"

ANSWER: _CARAVAGGIO_ or Michelangelo _MERISI_
C. We are looking for the surname, not the nickname, of Lodovico, Agostino, and Annibale, influential in the transition from Mannerism to the Baroque around 1600.

ANSWER: _CARRACCI_
23. For ten points each, identify the country with which these current and former leaders of the third world are associated.
A. Kwame Nkumrah
B. Mohammed Ali Jinnah
C. Fernando Henrique Cardoso

ANSWER: _GHANA_
ANSWER: _PAKISTAN_ ANSWER: _BRAZIL_
24. Identify the following Civil War generals for ten points apiece, none of whom was a killer angel at Gettysburg.
A. He won the battle of Five Forks and became commander of the US army in 1884.

ANSWER: Philip _SHERIDAN_
B. He accepted the surrender of General Joseh Johnson's army in Durham, North Carolina in 1865 and preceded Sheridan as army commander.

ANSWER: William _SHERMAN_
C. He was a brigadier-general at the First Battle of Bull Run.and fought brilliantly in the Seven Days' Battles and at Cedar Mountain.

ANSWER: Thomas _JACKSON_

