

The Questions Concerning Technology
By WB
Round 4

1. **This book somehow makes the leap to inserting electrodes in bull skulls from a discussion of *War With the Newts*. This book takes time to detail how one airline has themed flights where the flight attendants wear togas or take on the role of “serving wenches.” The author of this book complains that products are being burdened with “psychic loads” that add nothing of value. This work claims that soon people will be able buy access to simulated environments like a “eighteenth-century Japanese geisha house” . It uses the example of papers on K-mesons to illustrate that in super-industrial societies, people cannot keep up with the deluge of progress. This work ends with “Strategies for Survival” and “Coping with Tomorrow.”** For 10 points, name this book about the coming collision with tomorrow by Alvin Toffler.

ANSWER: *Future Shock*

2. **One tradition at this company required new and leaving engineers to eat a Habanero Hamburger at the Prince of Wales Pub. One former president of the company mooned people at a company lip-syncing contest and was noted for his constant state of drunkenness leading to such occurrences as him throwing “up at a poolside sales meeting in Hawaii.” This company was the target of outrage because of its selling of computers to the nuclear weapons designing All Russian Scientific Research Institute for Technical Physics. This company used the ARCS bootloader in its products. For NASA, it created the Columbia supercomputer and earlier it briefly owned Cray. Its sever lines included the Origin, Indigo, and Onyx. This company created a file system now included in Linux called XFS. Its fsn (fusion) graphical file management software was infamously used in *Jurassic Park*. An API this company developed served as the basis of OpenGL. This company’s version of UNIX was called IRIX. For 10 points, name this somewhat defunct graphics and supercomputing company founded by Jim Clark.**

ANSWER: Silicon Graphics [or SGL; or Silicon Graphics Computer Systems]

3. **The tblgen program helps programmers add onto this system using td files. Malfunctioning pipelines based on this collection of tools can be diagnosed by BugPoint. Passes in this program include ADCE, GVN, and bb-vectorize. This system’s generators can be used in a similar program using the DragonEgg Plugin. This suite allows for the building of virtual machines through its Vmkit and another part of this suite has gained popularity through its ability to give expressive diagnostics to syntax errors. As of Xcode 4.2, the default option for objective C code is this suite’s Clang. For 10 points, name this suite of programs for compilation and optimization that is currently the main open source rival of GCC.**

ANSWER: LLVM [or Low Level Virtual Machine]

4. **A company that is headquartered in this country produces the 40 mm Case Telescoped Weapon System. One defense contractor from this country is as of July 2012 the main designer of the Neuron unnamed combat air vehicle. It is currently planning to introduce Barracuda class submarines later in the decade. Its ASMP is a medium range missile. While this country did not conduct the attack, it did create the weapons that destroyed the USS Stark. Its primary assault rifle is the FAMAS. It exports the Mistral amphibious assault vessel and this nation is one of the few countries to have nuclear ballistic missile submarines. This country produces Exocet missiles, Mirage planes, and Rafale fighter jets. For 10 points, name this nation whose aircraft carrier is the *Charles de Gaulle*.**

ANSWER: France

5. **Joe Lynch and Freddy Socha died after a bomb went off at this event. Pedro the Voder, whose name came from Emperor Pedro II’s astonishment that phones could talk, made his world debut at this event. One structure from this “Whalensian Wonderland” is now located at Virginia Union University. The term timecapsule was coined for this event, which saw the first of Westinghouse’s timecapsules buried. Another Westinghouse attraction at this event was Elektro the robot. The physical layout of this event centered around the Trylon and Perisphere. Hans Laube gave the first public demonstration of his Smell-Action here, which would be later renamed to smell-o-vision. Norman Bel Geddes designed a ride for this event that detailed plans for a technologically advanced highway system. This event’s tagline was “The World of Tomorrow.” This event’s attractions included GM’s Futurama exhibit. For 10 points, name this first large exhibition to be held at Flushing Meadows.**

ANSWER: 1939 New York World’s Fair

6. **This man's proposed Missouri Program was to act as a proof checker. This thinker introduced for the purpose of studying formal verification a function f that returns $n - 10$ if n is greater than 100 and f of $n + 11$ otherwise. That function will return 91 if x is less than 101. He introduced a form of nonmonotonic reasoning that assumes that the only statements satisfying a predicate are those that are derivable from a given set of facts. That form of logic is known as circumscription.** He developed the first garbage collection implementation. His advice taker program was introduced in his paper Programs with Common Sense. This man coined the term “artificial intelligence.” For 10 points, name this inventor of LIST.

ANSWER: John McCarthy

7. **Willem van Eelen was inspired to work on this technology by his time as a POW. During WWII, Annheuser Busch attempted to create one of these materials using molasses and ammonia as a part of the war effort. In *Fifty Years Hence*, Winston Churchill claims that this technology will be invented to “escape the absurdity” without pleasures being banished. In 2011 University of South Carolina fired Vladimir Mironov, a researcher in this field for reasons that remain mysterious. The development of this technology is the goal of the New Harvest organization. Attempts to make this material often use goldfish cells. Mark Post has been attempting to create this by exercising myocyte structures made by stem cells. PETA has offered a million dollar prize for whoever creates a successful version of this substance. For 10 points, name this substance which would allow one to make a hamburger without killing cows.**

ANSWER: artificial meat [or synthetic meat; or tissue engineered meat; or in vitro meat; or artificial beef]

8. **Chinese company Seine Technology has recently tried to enter the market for these machines with their Pantum series. In 1985, Aldus released a program to partner with a newly release one of these machines. Gary Starkweather invented these machines. Some of these devices use corona wires to transfer charge and static eliminator strip to later dissipate that charge. This technology is the basis for products like the 5130cdn and the Brother MFC-9840. Because of pressure from the U.S. Government, these devices create small yellow marks which encode a model specific number. These devices use fusers to heat and bind a chemical layer onto the substrate. These machines work by making a latent electrostatic pattern on a drum by shining a certain light source onto the photoconductor. For 10 points, name these devices which use toner to add images and text to paper.**

ANSWER: Laser printer [prompt on partial answer]

9. **Makusu Tsutsui and Tomoji Kawai developed a version of this technology that is based on gold electrodes measuring quantum tunneling. One commercial product based on this technology was announced at the February 2012 AGBT conference. Some recent attempts to develop this technology have been based on MspA, but the primary protein used in prototypes of this technology have been modified α -hemolysin. The material in question is threaded using a molecular machine such as $\Phi 29$ polymerase. While this technology is capable of long read lengths, it currently suffers from a 4% error rate. The only announced commercial product based on this is the MinION which its manufacturer claims which is a thumb drive like device that can be plugged into a computer and hopefully cost less than \$1,000.** For 10 points, name this next-next generation sequencing technology that distinguishes bases through the changes in current as DNA moves through tiny openings.

ANSWER: nanopore sequencing

10. **The PAS 5500 is a machine for carrying out this technique. One tool used in this general process uses excited argon fluoride. Both before this process and a preceding oxidation, the object to be worked on undergoes RCA cleaning. This process uses spin coating to apply the necessary materials. The substrate in this procedure is aligned using a stepper. One two phase method for extending the abilities of this method is double patterning. Current plans call for this process to start using extreme ultraviolet in the next few years. Soft baking removes solvents from the resists added in this procedure. The pattern transfer artificial used in this process is called a mask. After this process, HF is applied to the substrate to etch it and later the wafer can be doped.** For 10 points, name this process of imposing the design for a microchip onto a piece of silicon.

ANSWER: photolithography [or nanolithography; or microlithography; prompt on “making a computer chip”]

11. **The feeding of beetles inspired Joseph Buford Cox to improve this device. The performance of these devices is increased by sprocket tipped bars, which reduce friction. When using these it is important to understand the stresses, or binds, present and to do a sizeup.** You can use this device to do bucking. Kickback and vibration are problems when using these devices. These machines which can be electric or gas powered have a part that is classified by its gauge and the pitch of its rivets. These tools must be sharpened after repeated use. Current designs for this go back to Andreas Stihl. For 10 points, name this portable destroyer of trees.

ANSWER: chainsaw

12. **One company that specializes in this sort of entity developed for their version of this technology the CROS and ICTT protocols, while more generic protocols used include NECP and CARP. One classification divides their behavior into random, popularity, greedy-single, and greedy-global. The behavior of these entities can also be cooperative or uncooperative. The largest of these entities was founded by F. Thomson Leighton and Daniel Lewin, the later of whom died on September 11th. That company offers Aqua and Sola products.**

Amazon's entry in this field is CloudFront. This umbrella term includes both negotiation services and hierarchical caching. Examples of these include Coral, which is based on peer to peer technology, and Limelight. These entities must handle request routing and individual units in these are dubbed origins or replicas. The largest of these uses what it dubs an "edge network" and is called Akamai. For 10 points, name these collections of servers that mirror information across the Internet, thus allowing web users to access material with a high quality of service.

ANSWER: Content Delivery Networks [or Content Distribution Networks]

13. **Arthur Cayley came up with a card game known by this name based on Trieze. The modern version of this device might have been invented by William Hooker, but usually that honor is given to James Henry Atkinson. Sarah Yule and Mary Keene are thought to have mixed up a line in the speech "Hospitality and How to Make Homes Happy" by Emerson and/or a quote in Emerson's Journal in creating one statement about these devices. The Procter Brothers bought the rights to manufacture the "Little Nipper" type of these. Quizbowl players might better know these devices for appearing in the right panel of the Merode Alterpiece. For 10 points, name these portable destroyers of rodents.**

ANSWER: mousetrap

14. **This inventor designed the "Cross Country" board game to help kids with their geography. This creator also made a toy cow that dispensed milk. This inventor created the Protograph, a typewriter that created several copies at once. This inventor's "Dolly Dipples" and Latho were floating sponges that contained a bar of soap inside. Her "Miss Illusion" doll could open its eyes using a spring mechanism and she also experiment with putting radios inside dolls. She created an umbrella that could have different outer covers snapped on, thus allowing the user to change the umbrella's color. For 15 points, name this "Lady Edison" and inventor of the vacuum ice cream freezer.**

ANSWER: Beulah Louise Henry

15. **Early models of the physics of these devices were created by Carvallo and Whipple. In 2011, Koijman et al. created a modification of this device that worked despite counteracting the forces that are conventionally thought to allow this device to work. Artist Eric Staller invented a "conference" version of this machine that gained momentary fame when Google bought some. One part of these machines comes in a Shimano designed SPD form that is clipless. Bowden cables were originally created for use in these machines and still are today. One early version of this device popular in the 1810's was Baron Karl Drais von Sauerbronn 's Draisine. Makers of these include Cannondale and Schwinn. These machines can be equipped with Derailleur gears and chainguards. For 10 points, name these machines that people move by pedaling.**

ANSWER: bicycle [or bike; prompt on velocipede]

16. **One result on logarithmic sized these uses what its authors claim is a "doubly exponential skip" proof technique. Nishimura and Yamakari introduced the quantum analog of this entity. Kannan showed that one set defined by these entities does not contain ESPACE and others showed that if a language is in that aforementioned set then the language must be Turing reducible to a sparse set. By the Karp-Lipton Theorem, if NP is in a set defined by having polynomial this, then the polynomial time hierarchy collapses. By allowing the key metric of this to be polynomial with respect to input, the unary halting problem can be solved and polynomial size this is equivalent to polynomial size boolean circuits. The ability to access these objects with what distinguishes P/poly from P. This is a string that is indexed by the size of the traditional input. For 10 points, name these additional strings that Turing machines can access in some non-uniform models of complexity.**

ANSWER: advice[accept boolean circuits before mentioned; while it isn't technically right, I feel many people will neg this with oracle, so prompt on "oracle" so as not to completely dishearten them]

17. **Vixen tried to achieve victory with this type of technology in the series *Uncle Jack and the Dark Side of the Moon*. A ten part serial on the 1950s show *Atom Squad* concerned a Nazi Scientist hatching a "scheme" to destroy America using this technology. In the two part finale of *The Secrets of Isis*, Rick is framed for the theft of a secret government device that did this. The Cybermen tried to capture a device for doing this called**

the Gravitron in the partially lost episode *Doctor Who* episode *The Moonbase*. In the *The Next Generation* episode True Q, Amanda Rogers's parents die despite the existence of this technology. On Stargate SG-1, a device designed to do this was stolen from Madrona by the NID. That device was called the Touchstone. The terrible DS9 episode *Let He Who Is Without Sin*, featured a plot by the New Essentialists to ruin the resort planet of Risa by corrupting this type of technology. Holman Hardt, a meteorologist, can unintentionally do this in the *X-Files* episode *Rain King*. For 10 points, name this technology used to ensure sunny skies and livable temperatures.
ANSWER: **weather control** [accept equivalents]

18. Ted Molczan claimed to see this machine from his backyard. This machine, which was actually made, is powered by the AR2-3. It is not SpaceShip1, but in 2005, this machine underwent testing while attached to the underside of the White Knight. This machine carried out OTV-1 and OTV-2. Some media outlets speculated that this device was observing Tiangong-1. This device is launched on an Atlas V and lands in Vandenberg. On its second outing, it spend 468 days in space. For 10 points, name this mysterious Boeing unmanned spaceplane.
ANSWER: Boeing **X37** [or **X37-B**]

19. The Avalon language was one component of the academic Camelot project that was created to handle these objects. The X/Open XA specification defines an interface between RMs and software that handles these objects. Attributes for these objects include requires_new and not_supported. Compensating ones act to counteract previously created instances of these objects. If and only if the serialization graph for these objects is acyclic, is there a serialized schedule for them. In one common protocol, these objects acquire locks in growing and shrinking phases, a scheme known as 2-phase locking. A different way to order these in distributed systems in timestamp ordering. These objects are listed in their namesake log which allows for recovery, a technique used by many file systems. The all or nothing nature of these events is known as atomicity. These objects permit three primary actions, validate, rollback and commit. For 10 points, name these units of work executed by a database.
ANSWER: **transactions**

20. One trademarked way to implement this feature is EQ ghostbuster technology. This is the key feature of the Optoma 750 and the Epson 5010. The SEI FPA field denotes data that works with this feature, however the primary way of doing this on consumer equipment is MVC encoding. The “American” type of this technology was a hand held device invented by Oliver Wendell Holmes. Sir David Brewster wrote a book that challenged the claim that this technology was brought to the masses by noted scoundrel Charles Wheatstone. This can be simulated through the Pulfrich effect. Nvidia's solution for enabling this uses IR emitters. The Gamecube secretly had this feature which a special version of *Luigi's Mansion* could utilize. The most common approach for providing this is anaglyph. A parallax barrier display is used in a recent Nintendo platform to enable this effect, but most implementations of this require special glasses. For 10 points, name this gimmick where objects in a movie look like they are popping out of a screen.
ANSWER: **3D** [accept equivalents; or **stereoscopic**]

Tiebreaker:

This company makes the Granbird bus. This company's new luxury model is the Quoris. It owns a large factory in West Point, Georgia. This company's entertainment platform is UVO. It makes the Rondo Wagon and the very ugly Soul. This company's ad campaigns have included really stupid urban hamsters. For 10 points, name this Korean maker of the Optima.
ANSWER: **Kia** Motors