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English for Computer Science

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Passage 1

While film used in cinema contains pigments that can create an infinitely large number of color variations, TV sets combine discrete amounts of red, green, and blue light to create a much more limited color range. To produce more colors, TV sets would have to combine purer, or more saturated, red, green, and blue by using narrowband light filters that select colors more precisely but diminish brightness at the same time.

Genoa Color Technologies Ltd. Has developed the software and hardware necessary to close this gap and make TV images more cinema - like without the unwanted dimming side effect. The trick is to add extra primaries, the basic colors that, combined, form all others. By adding yellow and cyan (a light blue) to the standard red, green, and blue, a display that could normally generate about 16.7 million colors would now be able to show more than one trillion.



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Passage 1

Genoa developed a color conversion algorithm that runs in a special microchip to be added to a television's imaging circuit. The algorithm gets a color value - from a DVD, for example, that the television would originally exhibit as a combination of three primaries - and finds how to best represent it as a combination of five primaries.



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Passage 1

1- According to the passage, the Genoa Color Technologies Ltd. Is a company . . .

- 1) producing more colors for its TV sets.
- 2) manufacturing TV sets with better resolution.
- 3) that has developed a combination of five primaries.
- 4) that has tried to bring close the quality of a TV image to that of the cinema.

2- By adding the two extra colors, the ratio of the colors that can be generated to those of the old standard is . . .

- 1) 10 to 1. 2) 40 to 1. 3) 60 to 1. 4) 90 to 1.

3- What is meant by the primaries as stated in the passage?

- 1) The basic colors.
- 2) Yellow and cyan colors.
- 3) The trick to generate more colors.
- 4) The standard red, green, and blue colors.



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Passage 1

4- Genoa Color Technologies Ltd. has ...

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- 2) developed the necessary software.
- 3) developed a color conversion algorithm.
- 4) developed a combination of five primaries.

5- According to the passage, Genoa Color Technologies Ltd. has managed to ... of the images.

- 1) close the gap between the TV image and the film image.
- 2) increase the gap between the TV image and the film image.
- 3) increase the brightness and the unwanted dimming side effect.
- 4) diminish the brightness and the unwanted dimming side effect.



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Passage 2

The MP3 audio -compression format is a technical standard -turned -fashion fad: MP3 players have become ubiquitous on city streets in many parts of the world. It's probably no surprise that, as television followed radio, the next standard - turned - fad will likely be a video - compression format : MPEG-4.

MPEG-4 became an internationally recognized standard in 2000. The visual equivalent to MP3, it was developed by the same organization, the Moving Picture Experts Group, an international working group operating under the auspices of the International Organization for Standardization and the International Electrotechnical Commission. Like MP3, MPEG-4 offers very compact file compression at selectable data rates. This allows users to make a tradeoff between quality and required storage space.



Passage 2

MPEG-4 can produce images superior to those produced with MPEG-2 (the DVD recording format), with only one-third to three-eighths the data.

With the new availability of high-quality digital video in manageable file sizes, pocket video players and camcorders with no moving parts are starting to appear, as well as hard drive-based video jukeboxes holding dozens of full-length movies. Soon, people will carry their movies, along with their music, in their shirt pockets.

Some of these new players and camcorders store video files in flash memory, such as the Secure Digital (SD) memory cards used in digital cameras and PDAs.



Passage 2

6- According to the above passage, what is/are the ever present technical standard(s) in a number of places in the world at present?

- 1) MP3 2) MPEG-2 3) MPEG-4 4) MPEG-4 and MP3

7- What organization developed the MPEG-4?

- 1) The International Working Group.
2) The Moving Picture Experts Group.
3) The International Electrotechnical Commission.
4) The International Organization for Standardization.

8- If you were asked to identify the most conspicuous quality for MP3 and MPEG-4 standards, which of the following would you choose?

- 1) Secure Digital memory. 2) High quality digital video.
3) Compact file compression. 4) Video-compression format.



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Passage 3

XML, the extensible mark-up language, provides structure as well as good looks to a document. While HTML can format things like headlines and tables and is considered as the current language, XML can define things like dates, invoice numbers, and prices and is assumed to be able to replace the HTML in a few years. This means you can build data files, Web pages, or documents that can be probed with simple questions by relying on semantics and logic instead of key words that this in turn speeds up any search you need to make.



Passage 3

To make this kind of smart searching possible, one further concept comes into play: the resource description format (RDF), a way of specifying the relationship between entities. It defines how pieces of data are represented in a series of documents, acting like a dictionary of definitions. For example: is spectrum a scientific term defining a range of electromagnetic frequencies, a slice of opinions or viewpoints in sociology or politics, or a well-known magazine? The builder of the database gets to decide, or adopt a definition suggested in some other already defined RDF. This allows you to define an ontology, or the relationships among RDF statements, linking various data elements in documents and allowing logical inferences to be made. An ontology is a family tree, or a cluster of related concepts; for example, to a medical database, all words ending in -oma are types of cancer.



Passage 3

9- According to the passage, what is the principal feature of the XML?

- 1) Building data files.
- 2) Formatting the text.
- 3) Relying on semantics.
- 4) Having the ability to infer.

10- What does the passage reveal to the reader about the two languages?

- 1) XML is the customary language that has replaced the HTML.
- 2) HTML and XML are both used but each for different purposes.
- 3) XML is more popular than HTML as it is capable to serve more purposes.
- 4) That HTML is the customary language for the present that may be shortly replaced by XML.

11- What is meant by an RDF (the Resource Description Format) statement?

- 1) A dictionary.
- 2) A smart search.
- 3) A list of data represented in a series of documents.
- 4) A linking of different data elements in documents that allows logical inferences to be made.



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Passage 4

It turns out that your kids are right once again. According to a recent report in Nature, playing video games of the kill-or-be-killed variety is good for their brain power. Not only that: if they are playing these games on the Sony Playstation 2 you got them last Christmas and get bored with Tony Hawk's Proskater 4, your kid and his or her closest 99 buddies can bundle their PS2s together and do their quantum chromodynamics homework.

This second bit of news-using Sony Playstations to build a specialized supercomputer was announced by researchers at the National Center for Supercomputing Applications and the computer science department at the University of Illinois in Urbana. These tinkerers paid about \$50,000 and got computing power that would otherwise cost at least five times as much. They wanted to learn if the sophisticated graphics processor used in the Sony Playstation to run slick games could also be used to solve big problems in particle physics.



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Passage 4

While hardly a threat to supercomputing giants like IBM, the achievement illustrates the point that consumer electronics has now become a leading edge of the computer industry. Advances are no longer trickling down to these devices from grand government projects but surging up from this innovation hot spot. Although some manufacturers have gone to great lengths to prevent unusual use of their consumer equipment, it is hoped that most would adopt Sony's tinkerer-friendly attitude, allowing this hot spot to percolate upward as fast as possible.



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Passage 4

12- According to the passage, what is the first bit of new about Sony Playstations?

- 1) Kids like to play the kill-or-be-killed video games.
- 2) Kids get bored soon from games played on the Sony Playstation.
- 3) Kids like to play kill-or-be-killed games on the Sony Playstation 2.
- 4) Unlike the popular opinion, the kill-or-be-killed video games can be good for children's brain power.



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13- What have the researchers at the National Center for Supercomputing Applications and the computer science department at the University of Illinois at Urbana accomplished with the help of Sony Playstations?

- 1) To become Sony's tinkerers hot spot.
- 2) To build a specialized supercomputer.
- 3) To become a leading edge of the computer industry.
- 4) To pay one fifth of the actual cost for the computer science.



Passage 4

14- By reading the passage, which of the following can best reveal who a tinkerer may be?

- 1) Children playing with Playstations.
- 2) Researchers working at scientific centers.
- 3) Manufacturers producing consumer electronics.
- 4) People who try to repair or improve something in a casual way.



Passage 5

Within the next several years, we'll be awash in powerful, cheap sensors: radio-frequency ID (RFID) tags that track objects (and the people who happen to be wearing, riding, or chatting into them); biometric sensors that will identify us by our unique irises, fingerprints, voices, walking patterns, or other physical quirks' Global Positioning System receivers, embedded into all manner of things, able to track us to within a meter ; and tiny, high-resolution digital still and video cameras, also built into everything, from cellphones to wallpaper.

The resulting torrent of data will cascade into government and corporate data systems, the Internet. Facts and information that are largely incoherent but overwhelming in volume and detail will accumulate in databases too scattered and numerous - and valuable -to be shut off completely from the rest of cyberspace.



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Passage 5

15- What is meant by cyberspace as given on the last line of the passage?

- 1) Databases.
- 2) The Internet.
- 3) The information world.
- 4) The cascading torrent of data.

16- If you were asked to choose the best title for the above passage which of the followings would it be?

- 1) The Cheap Sensors.
- 2) The Tracking Sensors.
- 3) The Ubiquitous Sensors.
- 4) The Omnipotent Sensors.

17- The principal feature of a biometric sensor is to identify . . .

- 1) A human trait.
- 2) A physical quirk.
- 3) An individual's position.
- 4) All of the above.



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Passage 6

Movie studios are in the midst of digitizing their archived films so that they can be repackaged for digital distribution. Part of the process involves finding and removing the defects that inevitably come with age, particularly those distracting long, vertical scratch lines. So far, automatic detection of these lines has proved elusive, requiring either lots of manual tuning or many false alarms. But workers at the Istituto per le Applicazioni del Calcolo, in Rome, now have an improved scheme for automatically detecting these lines, which are usually a mere 3 to 10 pixels wide.

The key insight is that scratches should be modeled in a more complex manner than if they were purely noise added to the image. In addition to being fast enough to run in real time, the new method keeps the number of false positives low, so there is little fear that it will accidentally remove, for example, the hanging rope in your favorite cowboy movie.



Passage 6

18- Which of the following would be the best title for the above passage?

- 1) False Positives.
- 2) Defective Films.
- 3) Scratchy Films.
- 4) Digitizing the Archived Films.

19- According to the passage, why are movie studios digitizing their films?

- 1) For repackaging.
- 2) For digital distribution.
- 3) For removing the defects.
- 4) For improving the quality of the films.

20- What does the passage imply as to the method used?

- 1) There is a complex scratch model.
- 2) There are lots of manual tuning and false alarms.
- 3) They have an improved scheme of a mere 3 to 10 pixels wide.
- 4) There is a little chance of removing unwanted parts accidentally.



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Passage 7

In the heady, early days of computers, even sober scientists believed that machines would become intelligent and eventually start to think like us. That was the promise of artificial intelligence, or AI, in the 1950s. And in the 1960s. And in the 1970s.

Spectrum, over those decades, believed the gospel of AI evangelists. Among the many articles we ran on the imminence of machine intelligence was one 20 years ago. It prophesied in June 1984 that expert systems - programs that mimic human experts, ability to make decisions - would replace air traffic controllers by the year 2000, and doctors and scientists within as few as 50 years.



Passage 7

The debate on whether machines were really intelligent was a favorite topic in conference halls and journal pages., Spectrum was no exception. Intelligent systems will begin to make their way into the world, but few people will consider them to be really intelligent after all, wrote Robert Kahn in 1983. Kahn was one of the founders of the Internet and a former research director at the Defense Advanced Research Projects Agency, in Arlington, Va. But the best assessment of AI turned out to be that of a June 1979 letter by reader Joseph Bates from Cornell University, in Ithaca, N. Y., who wrote; I believe we are on the road to building artificial intelligence, but considering that we still have a trouble developing correct 10-line programs, it is likely to be a long journey. Bates was right, and the journey continues for AI researchers. As for machines usurping humans, so far computers have made inroads on only a couple of fronts: telephone switchboards and grandmaster chessboards.



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Passage 7

21- If One has to give a title to the above passage which of the following would be the best choice?

- 1) The Evolution of computers
- 2) The Evolution of Expert systems
- 3) The Evolution of Artificial Intelligence
- 4) The Evolution of Machines as Usurpers of Humans

22- By reading the passage what is meant by spectrum?

- 1) A scientific journal
- 2) Gospel of AI Evangelists.
- 3) Articles on Machine Intelligence,
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23- Which of the following sentences best reveals what the passage says?

- 1) Artificial Intelligence has replaced manpower,
- 2) Artificial Intelligence has still a long way to go,
- 3) The early days of computers are over and nowadays machines usurp humans.

4) Building of Artificial intelligence is no exception to the developments that were prophesied earlier.

24) The idea of AI has developed since how many decades?

- 1) Five 2) Four 3) Three 4) Two

25- When Joseph Bates of Cornell University comments on the assessment of what is his tone?

- 1) ironic 2) realistic 3) idealistic 4) scientific



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