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course : Computer Science

subject : Introduction of ICT

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Mid - Semester Assignment Introduction of ICT

Question :- 1

Watch animated movie "Incredible 1"
and discuss the technologies
used by characters of the
movie. Further, take note of
the technologies used in
making of this movie?

Answers:-

Skeletons and Muscles:

As we began to create him, we developed a completely new and different approach for his skeleton and the way muscle, skin, bones, and fat would attach to it. We used a fantastic new technology called goo which allows the skin to react to the muscles sliding and sticking underneath in a very true fashion."

Skin and Hair:

This is where Pixar made its most important breakthroughs with new approaches to lighting and shading the skin and sculpting

hairstyles. Pixar came up with a new technology called "subsurface scattering" which gave more translucency to the skin and made the characters seem alive.

Clothing:

The Incredibles was more complicated than any animated film in history and more akin to an epic costume drama. More than 150 garments had to be specially designed and tailored to fit the lead and background characters.

Question :- 07

Write a note on the following embedded technologies in detail?

Answers :- Machine Learning :-

Machine learning is an application of artificial intelligence (AI) that provides a system the ability to learn and improve from experience without being explicitly programmed. Machine learning focuses on the

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development of computer programs that can access data and use it learn for themselves

5G Technology :

In telecommunications, 5G is the fifth generation technology standard for cellular networks which cellular phone companies began deploying worldwide in 2019. The planned successor to the 4G networks which provide connectivity to most current cellphones. Like its predecessors 5G networks are cellular networks in which the service area is divided into small geographical areas called cells.

Virtual reality:

Virtual reality is the term used to describe a three dimensional computer generated environment which can be explored and interacted with by a person. That person becomes part of this virtual world or is immersed within this environment and whilst there is able to manipulate objects OR

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perform a series of actions.

Robotics :

Robotics technologies consist of all processes necessary to design, build and maintain robots and other intelligent machines. Robots are sophisticated intelligent systems used to assist pilots and maneuver spacecraft without direct human intervention.

The five major fields of robotics (human-robot interface, mobility manipulation, programming sensors) and their importance to robotics development.

Question : 3

Write a note on the following?

a) Write a note on ~~the~~ prevailing generation of computers in use and discuss its characteristics in detail.

Answers : First generation : Vacuum Tubes (1940 - 1956)

The first computer systems used vacuum tubes for circuitry and magnetic drums for memory.

First generation computers relied on machine language. the lowest-level

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programming language. For example
UNIVAC and ENIAC

Second Generation:

Transistors (1956-1963)

The world would see transistors
replace ~~vacuum~~ vacuum tubes
in the second generation
of computers. Second generation
computers moved from cryptic
high-level programming.

Third Generation: Integrated circuits (1964-1971)

The development of the
integrated circuit was the
hallmark of the third
generation of computers.

Transistors were miniaturized
and placed on silicon chips
called semiconductors.

Fourth Generation: Microprocessors (1971-)

The ~~micro~~ microprocessor brought
the fourth generation of
computers as thousands of
integrated circuits were
built onto a single
silicon chip.

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Fifth Generation:

Artificial Intelligence
Fifth generation computing devices, based on artificial intelligence, are still in development though there are some applications such as voice recognition.

b) Multiply the given binary numbers 10001001 with 1001001.

Answer:

$$\begin{array}{r} 100011001 \\ 10010011 \\ \hline 100011001 \\ 100011001 \\ 000000000 \\ 000000000 \\ 100011001 \\ 000000000 \\ 000000000 \\ \hline 100011001 \\ \hline 101000010111 \end{array}$$