**ITC61 ACTIVITY**

Ericka Mianne D Ferma

IT601

**CHAPTER 10**

1. **How can Futuristic Technology be defined?**

There are a lot of current technologies that have either entered the market or becoming more deeply established in various industries and applications.

1. **Which are the top Futuristic Technologies?**

- 3D Printing Technology

- 6G Technology

- Autonomous Robots

- Artificial Neurons

- Artificial General intelligence

- Mind Uploading

- Driverless Vehicles

- Infrastructure Hacking

- Regenerative Medicine

- Digital Twin (DT) Technology

- Programmable Living Robots

- Human Augmentation

- Intelligent Process Automation (IPA)

- Space Elevator

- Rotating Skyhook

- Light Sali

1. **How did 3D printing begin?**

In the beginning of the 1980s, 3D printing was thought to be helpful for prototyping. This is why it was also referred to as fast prototyping in the past.

1. **What are the applications of 3D printing?\**

* With the help of three-dimensional bio-printers in the USA, Italy, and other countries, work is being done to create food items that can be 3D printed for astronauts and others while preserving the food's texture and flavor. Italian-developed plant-based meat is one example of this type of food.
* Many businesses, like Nike and others, produce clothing, shoes and other products made in the fashion industry with 3D printing publishing. Systems that rely on software produce customized products for man or woman who is ideal for them.
* Typhoon fighter jets, Airbus planes, Swedish supercars, GE aviation engines, the US Air Force, and numerous other businesses and their products all use a variety of printed parts and components.
* Some US-based businesses are developing 3D printed firearms. They are flexible and helpful for a variety of uses.
* Human body parts based on 3D printing are being developed at very small and experimental measures for the healthcare industry's implantation and other surgeries.
* Amsterdam saw the installation of the world's first 3D-printed metal bridge.
* In the field of education and training, many applications are being examined, particularly for the Science, Technology, Engineering, and Mathematics (STEM) education systems.
* During the Covid-19 pandemic, many businesses employed 3D printing to produce PPE (personal protective equipment) kits in response to an exponential increase in demand.

1. **In what ways does 6G technology differ from other technologies?**

6G offers data rates of up to 100 GB/s, which is 10 times faster than 5G.

1. **What is the need for 6G technology?**

- **The convergence of technology** - There are numerous technologies that exist in the present-day wireless communication networks.

- **Incorporation of high performance computing (HPC)** - The huge demand for low latency and faster speeds can be fulfilled through 6th generation wireless technology.

- **Internet of Things (ioT) network** - The number of IP-enabled devices are expanding exponentially, which would need huge bandwidth and high-capacity network connection for communication.

- **Mobile Edge computing** - The implementation of edge computing and mobile edge computing in a connected networks of billions of IOt-enabled devices would need huge data wih very low latency.

1. **What is data center?**
2. **What is an autonomous robot?**

- It is an intelligent machines where they can perform tasks without any intervention of human being.

1. **What are the autonomous mobile robots (AMRs)?**

- task-oriented

- self-oriented

- self-maintaining

1. **In what sense are Artificial Neurons useful?**

- Artificial neurons act similar to the biological neurons functioning in human brain.

1. **What are AGI and ASI?**

- Artificial Intelligence (AI) is a very vast and futuristic technology, which is just evolving. While Artificial Super Intelligence (ASI) is the most advanced form of artificial intelligence, which will supersede the capabilities and power of the most genius brains on the earth.

1. **Why is Digital Twin (DT) technology Important?**

- this technology helps the industries save the prototyping cost and operational failures of products and processes significantly.

**CHAPTER 11**

1. **How do modern technologies impact cybersecurity?**

- Artificial Intelligence (AI) is being used to create more advanced and sophisticated cyber attacks.

1. **How are the advanced technologies affecting cybersecurity?**

- Advanced skills and expertise of hackers who always try to explore the possible vulnerabilities in the emerging technologies often hit the markets.

1. **Extensive data exposure: What are the risks?**

- it flaws expose all object properties to API calls rather than what the user needs to acts on without considering the object’s sensitivity level. This vulnerability exposes the user to data leaks.

1. **Is there a strategy for controlling cyber breaches?**

- To avert or reduce the impact of that huge

devastation, businesses focus on investing hugely on the cybersecurity

to maintain a robust and reliable security level to avoid any kinds of

damages caused by the cyber attacks

1. **What is the reason for the shortage of cybersecurity professionals?**

- Another impact of emerging technologies is the shortage of the

cybersecurity professionals. Entire world has already been walking

through tough time due to the shortage of skilled and qualified cybersecurity professionals,.

1. **What impact do cyber-attacks have on business?**

- a cyber attack takes valuable time and resources away from other areas of the business.

1. **What are the main reasons for data exposure?**

* usage of an extensive number of devices in a variety of IoT environments where a wide range of firmware and software are run by numerous devices.
* More user accounts with those huge amounts of Data exposure is also possible with connected devices and services.
* Incorrect handling of the creation, maintenance, and storage of passwords by the customers.
* Outdated software and hardware that isn't updated frequently enhance the conditions.
* ongoing development of new techniques and strategies that people are not very skilled in.

1. **What is Risk?**

- the threats to the states and communities exist through the

cyberspace.

1. **How can cybersecurity affect national security?**

- it may be very direct, in which the cyberattacks are launched on the data, secrets, systems, assests, plans to steal and misappropriate them in accordance with the needs of the adversary that wants to inflict damages to the national security a particular country in certain conditions.

1. **What is Zero trust policy?**

- it is a security model based on the principle of maintaining strict access controls and not trusting enyone by deafault, even those already inside the network perimeter.