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BSIT601 **ITC61 - ADET**

Chapter 10

1. How can Futuristic Technology be defined?
    - Futuristic Technology can be defined by the changes that technology does with people's lives and how it makes everything easier.
2. Which are the top Futuristic Technologies?
    - 3D Printing Technology
    - 6G Technology
    - Autonomous Robots
    - Artificial Neurons
    - Artificial General Intelligence (AGI)
    - Mind Uploading
    - Driverless Vehicles
    - Infrastructure Hacking
    - Regenerative Medicine
    - Digital Twin (DT) Technology
    - Programmable Living Robots
    - Human Augmentation
    - Intelligent Process Automation (IPA)
    - Space Elevator
    - Rotating Sky
    - Light Sail
3. How did 3D printing begin?
    - The idea of 3D printing began way back 1940s when some scientists had concepts and thought of a process of three-dimensional printing.
4. What are the applications of 3D printing?
    - Some applications of 3D printing are for creating 3D printed food items for astronauts using plant-based meat, creating customized products for man/woman using software-based systems, 3D printed parts and components for jets, airplanes, supercars and firearms, 3D printing based human body parts, 3D printing metal bridges and the manufacturing of PPE kits during the Covid-19 pandemic.
5. In what ways does 6G technology differ from other technologies?

- 6G technology differ from other technologies by offering more throughput and much lesser latency, supporting more advanced ICT technologies such as VR/AR, using upper spectrum in terahertz range for more speed and data throughput, giving speed at least 5 times faster up to above 100Gbps and many more.

6. What is the need for 6G technology?
    - 6G technology is needed to create higher level of efficiency, reduction in cost, improvement in daily business processes and enhancement of service and product quality in the world.
7. What is a data center?
    - Data center is where data and applications are stored and shared, it also house internet services like cloud computing.
8. What is an autonomous robot?
    - Autonomous robots can perform tasks based on the intelligence they possess through computer-vision training data sets and can be able to do those tasks without human intervention.
9. What are autonomous mobile robots (AMRs)?
    - AMRs are robot that are capable enough to tackle different issues since they are task-oriented self-operating and self-maintaining machines even without any support or intervention from human beings.
10. In what sense are Artificial Neurons useful?
    - Artificial Neurons are useful for processing data inputs and passing the output to the next level based in its weight.
11. What are AGI and ASI?
    - AGI, also known as deep artificial intelligence solves complex problems in the way human brain thinks and updates the learned experience for the future applications while ASI supersedes the capabilities and power of the most genius brains on the earth.
12. Why is Digital Twin (DT) technology Important?

- The importance of Digital Twin is that, it helps the industries save the prototyping cost and operational failures of products and processes significantly.

Chapter 11

1. How do modern technologies impact cybersecurity?
    - Modern technologies impact cybersecurity by having new technologies that are used in business to achieve the competitive-edge in the market leaves numerous security aspects skipped and overlooked.
2. How are the advanced technologies affecting cybersecurity?
    - Advanced technologies affect cybersecurity by not only having huge impact of the emerging and disruptive technologies but also empowering the hackers and malicious users as well.
3. Extensive data exposure: what are the risks?
    - With the shortage of cybersecurity professionals to counter hackers and malicious actors who are more organized and bold to attack the chance of extensive data exposure will remain very high.
4. Is there a strategy for controlling cyber breaches?
    - Some techniques and schemes for controlling cyber breaches are monitoring and updating software and hardware tools, training company staff and users, using cloud encryption, and deploying defensive AI.
5. What is the reason for the shortage of cybersecurity professionals?
    - Advancement in the emerging technologies and newly introduced technological business ecosystems continuously depletes the availability of cybersecurity professionals due to lack of requirements.
6. What impact do cyber-attacks have on businesses?
    - Businesses focus on investing hugely on the cybersecurity to maintain a robust and reliable security level to avoid anu kinds of damages caused by cyber-attacks.
7. What are the main reasons for data exposure?

- Use of hug number of devices, increased number of user accounts, mismanagement in password creation, outdated software and devices and continual emergence of innovative techniques.

8. What is Risk?
    - The probability of an unwanted occurrence, such as an adverse event or loss.
9. How can cybersecurity affect national security?
    - By losing to major businesses, stealing and manipulation of data, creating panic and social disturbances, stirring political chaotic conditions and tearing the social fabric and community harmony.
10. What is Zero trust policy?
    - One of the techniques and schemes in cybersecurity systems which is not trusting anyone by default, even those already inside the network perimeter.