Section 2 Study Companion

**Lesson 2.1 – Introduction to Information Technology**

What is the difference between information technology and information systems?

IT Functions in the Organization

* User Support
* Data Management
* Networks
* System Integration

Core Components of IT Software

* Software Development
* Security
* Business Analysis

**Business of IT – Web Development**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intranet | Internet | Extranet |
| What is the purpose? |  |  |  |
| Give Examples of Each |  |  |  |

**Business of IT**

* Business Intelligence
* Project Management
* Outsourcing Services

**Lesson 2.2 – IT as a Discipline**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Computer Engineering | Computer Science | Software Engineering | Information Systems | Information Technology |
| What do they do? |  |  |  |  |  |
| Give an example of each |  |  |  |  |  |

**5 Generations of Computers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1st Generation | 2nd Generation | 3rd Generation | 4th Generation | 5th Generation |
| Hardware |  |  |  |  |  |

**Administrators**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | System Administrator | Network Administrator | Database Administrator | Security Administrator | Web Administrator |
| What does each do? |  |  |  |  |  |

**What is the difference between a System Administrator and a Network Administrator?**

**In summary what do all administrators do?**

**Architecture**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cloud Architect | Network Architect | Automation Architect | Cybersecurity Architect |
| What does each do? |  |  |  |  |

**In summary what do all Architects do?**

**Engineers**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Machine Learning Engineer | Software Engineer | Network Engineer | Cloud Engineer |
| What does each do? |  |  |  |  |

**In summary what do all Engineers do?**

**Analysts**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Technical Support | System Analysts | Data Analysts | Security Analysts | Cybersecurity Specialists | Technical Consultant |
| What does each do? |  |  |  |  |  |  |

**In summary what do all Analysts do?**

**Other IT Roles**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Project Managers | Web Developers | Software Tester | Technical Sales |
| What does each do? |  |  |  |  |

**In summary, what is the purpose of the IT department in an organization?**

**Lesson 2.4 Data and Information**

**The Data Pyramid**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Data | Information | Knowledge | Wisdom |
| Definition |  |  |  |  |
| Example |  |  |  |  |

**What is Big Data?**

**Structured and Unstructured Data**

|  |  |  |
| --- | --- | --- |
|  | Structured Data | Unstructured Data |
| Definition |  |  |
| Example |  |  |

**Cloud Based Systems**

|  |  |  |  |
| --- | --- | --- | --- |
|  | IaaS | PaaS | SaaS |
| Full Name |  |  |  |
| Purpose |  |  |  |
| Examples |  |  |  |

**Data Sources**

* Where do companies store data?

**Data Quality**

* How does quality data help businesses?

**Data Hygiene**

* What is dirty data?
* What is data scrubbing?
* What are the different types of bad data?

**Quality Data Attributes**

* What is Precise?
* What is Valid?
* What is reliable?
* What is timely?
* What is complete?

**Lesson 2.5 – Computer Systems**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Hardware | Software | Middleware |
| Definition |  |  |  |
| Examples |  |  |  |
| Purpose |  |  |  |

**How do all 3 work together (Hardware, Software, and Middleware)?**

**Hardware**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Motherboard | CPU | RAM | Hard Drive | Power Supply |
| Definition |  |  |  |  |  |

**Network Types**

|  |  |  |
| --- | --- | --- |
|  | LAN | WAN |
| Definition |  |  |
| Example |  |  |

**Network Designs**

|  |  |  |
| --- | --- | --- |
|  | Client to Server | Peer to Peer |
| Definition |  |  |
| Example |  |  |

**Topologies**

What are the two types of topologies?

What are the 4 types of physical topologies?

What is a protocol?

What is the most popular protocol?

What are the special purpose computer systems to connect a network?

What is the purpose of network operating systems and other software applications?

**Summary Questions**

Why is an IT department important in an organization?

How does ensuring that data and information systems support business goals contribute to organizational success?

Describe the basic structure of a network.

Explain the role of the network as a framework for the business ecosystem.