**Reference Answers to Chapter 2**

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| **Num** | **Multiple Choice Answers** | **Matching Answers** |
| 1 | C | G |
| 2 | B | J |
| 3 | B | F |
| 4 | B | Internet of Things (IoT) |
| 5 | C | H |
|  |  |  |
| 6 | B | I |
| 7 | D | E |
| 8 | C | C |
| 9 | C | D |
| 10 | B | B |

**Open Ended Questions:**

1. **Discuss the Internet and web including their origins, the four generations of the web, and most common uses.**

The Internet was launched in 1969 when the United States funded a project that developed a national computer network called Advanced Research Project Agency Network (ARPANET). The Internet is an immense network that connects together smaller networks all over the globe. The web was introduced in 1991. Prior to the web, the Internet was all text—no graphics, animations, sound, or video. The web made it possible to include these elements. It provided a multimedia interface to resources available on the Internet.

* The first generation of the web, known as Web 1.0, focused on linking existing information. In 2001, the second generation, Web 2.0, evolved to support more dynamic content creation and social interaction. Facebook is one of the best-known Web 2.0 applications. Web 3.0 identifies relationships between data. Siri and Google Assistant are examples of Web 3.0 applications. Web 4.0, called the mobile web, is defined by the use of mobile tools that provide new sources of information for programs to provide users with information. Web 5.0 is on the horizon—called the emotional web, this generation may include programs that anticipate our needs based on our mood and behaviors. However, this future is not yet realized, and the specifics of Web 5.0 are still to be determined.
* Some of the uses of the Internet are communicating, shopping, searching, education or e-learning, and online entertainment. Communicating is the most popular. You can exchange texts, emails, photos, and videos with family and friends from almost anywhere in the world. Some activities of entertainment are music, movies, and playing video games with friends around the world. Other activities to participate in are shopping, doing research online, and e-learning.
* 互联网起源于1969年，当时美国资助了一个名为ARPANET的国家计算机网络项目。互联网是一个巨大的网络，将全球各地的小型网络连接在一起。
* 万维网起源于1991年，是一个由互相链接的[超文本](https://baike.so.com/doc/5869854.html" \t "https://baike.so.com/doc/_blank)组成的系统。在万维网出现之前，互联网仅限文本传输，无图形、动画、声音或视频。万维网使这些元素可通过超文本访问和传输，为互联网资源提供了多媒体界面。
* 第一代万维网（Web1.0）专注于链接现有信息，提供信息查询；第二代万维网（Web2.0）支持更加动态的内容创建和社交互动；第三代万维网（Web3.0）关注数据之间的关系和个性化服务；第四代万维网（Web4.0）应用于移动设备；第五代万维网（Web5.0）即将推出，称为情感网络，将基于用户情绪和行为预测用户需求。
* 互联网应用包括在线沟通、线上购物、信息查询、在线教育或在线学习、在线娱乐等。

**3、What are web utilities? Discuss filters, file transfer utilities, and Internet security suites.**

Web utilities are specialized utility programs that make using the Internet and the web easier and safer to use.

* Filters are used by parents and organizations to block certain sites and to monitor the use of the Internet and the web.
* File transfer utilities copy files to (downloading) and from (uploading) your computer. Three types are:
  + Web-based file transfer services make use of a web browser to upload and download files. Popular services include Microsoft’s OneDrive (onedrive.com) and Google’s Google drive (drive.google.com).
  + BitTorrent distributes file transfers across many different computers.
  + File Transfer Protocol and secure file transfer protocol which allow users to efficiently copy files across the Internet.
* An Internet security suite is a collection of utility programs designed to maintain your security and privacy while you are on the web These programs control spam, protect against computer viruses, provide filters, and much more. Two of the best-known Internet security suites are Symantec Norton Internet Security and Bitdefender Internet Security. These companies also offer apps for mobile devices, Bitdefender Mobile Security and Norton Mobile Security.
* 网络工具软件是帮助用户方便安全地使用互联网和万维网的专用软件。
* 过滤器软件用于阻止访问某些网站或控制用户上网时间。
* 文件传输工具软件用于帮助用户上传或下载文件，包括在线文件传输服务、BitTorrent（比特流）内容分发、文件传输协议（FTP）和安全文件传输协议（SFTP）。
* 网络工具套件用于维护互联网用户的信息安全和隐私保护，提供垃圾邮件过滤、病毒防护和网络攻击检测等服务。

**8、What is cloud computing? Describe three basic components of cloud computing.**

Cloud computing allows users to maintain, store, and access software and data from the Internet, rather than from the users’ hard drives. The basic components of cloud computing are:

* + Clients- Corporations and end users who want access to data, programs, and storage.
* The Internet - Provides the connection between the clients and the providers.

* Service providers - Organizations with computers connected to the Internet providing access to software, data, and storage.
* 云计算使用户可通过互联网维护、存储和访问来自云端服务器的软件和数据。
* 云计算的基本构成包括客户端（云服务用户）、互联网（提供用户与云端的通讯服务）和云端（云服务器和运营商）。