1. **Give the full name of the protocol that is normally used to assign a dynamic IP address to a device. If you write the acronym, you will get half the marks.**

Dynamic Host Configuration Protocol (DHCP)

1. **State one way in which a proxy can check if a cached page is still valid.**

The server will check the cached page is still valid by using the last modified date on its cached copy to compare with the new page last modified date. If the new page remains unchanged then both pages are identical and the cached page is still valid. This also helps avoid re-fetching.

1. **How is state information retained in a HTTP session?**

A cookie

1. **Give the full name of a protocol used by email clients to receive email. If you write the acronym, you will get half the marks.**

Simple Mail Transfer Protocol (SMTP)

Post Office Protocol (POP)

1. **State one function that is handled by SIP.**

SIP can establish two-party, multiparty and multicast (one sender and many receivers) sessions. The sessions may contain audio, video or data. SIP handles setup, management and termination of sessions.

1. **State two consumer risks with using the cloud.**

Data integrity / security.

Loss of service / frequent service interruptions.

1. **What is the purpose of a routing table?**

Each router has a routing table that it uses to make routing decisions. Processing packets and passing it on its way is called routing.

1. **State one difference between a *hub* and a *switch*.**

Hub is a layer one device.

Switch is layer two device.

1. **State one advantage of using a reverse proxy.**

Security, load balancing, caching, spoon feeding (slow clients) and compression.

1. **State one advantage of RTP over UDP for VOIP communication.**

RTP adds sequencing to packets that will arrive in order.

RTP contains time stamp indicating when a packet should be played relative to previous packet.

1. **State one advantage of *persistent* connection.**

It allows an established TCP connection to send multiple requests and responses which also known as connection reuse.

1. **Name one protocol used by a mail client to retrieve email from a mail server. Acronyms will do.**

Simple Mail Transfer Protocol (SMTP)

Post Office Protocol (POP)

1. **Name a device that is used to connect computers to each other on the same LAN (eg, on your home network).**

A switch.

1. **Name one function that is provided by a proxy.**

Caching (web proxies, dns proxy)

Security (client, content, access control)

1. **Give the full name of the protocol used to transmit email.**

Simple Mail Transfer Protocol (SMTP)

1. **When is a persistent connection closed?**

When it has been idle for a short time (eg, 60 seconds)

When there are a large number of open connections and some need to be closed.

1. **Name one type of page that cannot be cached.**

A 'dynamic' page.

1. **Name one reason for the development of MIME.**

To transfer richer (non-ASCII) content such as languages expressed using non-ASCII character sets, voice and images. SMTP supports only 7-bit ASCII.

1. **Identify two key differences in the computer-using habits of typical Baby Boomers and Gen Yers.**

Baby Boomers - handshake/phone. PCs came late and they had to adapt to mobile phones. Work is life. Process-oriented.

Gen Y - Grew up with IM/chat, texting and video games. Strong multi-taskers. Work-life balance, expect fulfilment from work. Highly interactive.

1. **Identify two ways in which users' devices have significantly changed during the last 5-10 years.**

Smaller in size. Hence can be carried around easily.

More powerful - CPU speed/memory/storage

Highly connected. Can work offline.

Diverse - many kinds of devices - desktops, laptops, tablets and phones.

1. **What is MCommerce?**

The purchase of digital goods and services, such as images, audio and video, and location-specific data.

1. **State one function of an application gateway.**

Can translate from one format to another. Eg. an email gateway could translate Internet messages to SMS for mobile phones.

Can provide security services - look inside packets and decide what policies to apply.

1. **Name a device that is used to connect a LAN (eg, your home network) to the Internet.**

A router.

1. **Differentiate between forward and reverse proxies.**

A forward proxy acts on behalf of (generally internal) clients with respect to the outside world. Client/proxy/outside-world

A reverse proxy acts as a proxy to a number of servers. The outside world interacts with the proxy. Outside-world/proxy/servers.