Exercise 1

A = Returns a 32-bit IPv4 address, most commonly used to map hostnames to an IP address of the host, but it is als used for DNSBLs, storing subnet masks in RFC 1101, etc.

CNAME = Alias of one name to another: the DNS lookup will continue by retrying the lookup with the new name.

MX = Maps a domain name to a list of message transfer agents for that domain

NS = Delegates a DNS zone to use the given authoritative name servers

PTR = Pointer to a canonical name. Unlike a CNAME, DNS processing stops and just the name is returned. The mo t common use is for implementing reverse DNS lookups, but other uses include such things as DNS-SD.

SOA = Specifies authoritative information about a DNS zone, including the primary name server, the email of the d main administrator, the domain serial number, and several timers relating to refreshing the zone.

Exercise 3

1. a.au, t.au, n.au, c.au, d.au, r.au, m.au, q.au, s.au. Recursive query.
2. rproxy.cecs.anu.edu.au.
   Instead of creating A records for each subdomain and binding it to the IP address of the server, a CNAME records could be created so the subdomain could point to the main domain.
3. in "Authority" you see what the recursive has learnt about which nameservers are authoritative for your record
4. 129.94.242.45, 129.94.242.2, 129.94.242.33
5. ns1.cecs.anu.edu.au, ns2.cecs.anu.edu.au, ns3.cecs.anu.edu.au, ns4.cecs.anu.edu.au
   IP address = 129.94.242.45
   It uses recursive query.
6. root-e.pknic.pk, root-c1.pknic.pk, root-c2.pknic.pk, ns3.pknic.net.pk, root-s.pknic.pk
   Recursive query.
7. No because I get a response from the CSE nameserver and the CSE nameserver is not one of the Yahoo! nameser ers.
8. Since there is no aa flag (the flags are qr rd ra), there is no authoritative answer.
9. ns1.yahoo.com, ns2.yahoo.com, ns3.yahoo.com, ns4.yahoo.com, ns5.yahoo.com. Recursive query.
10.
11. Yes.