Question 2(a)

Compare the role and responsibilities of user mode and kernel mode of Windows 2000 system.

Windows 2000 system is made of layers and it works in two modes:

① User mode

② Kernel mode

User mode :-

User mode is responsible for providing insulation of end users from kernel mode. Windows 2000 user mode API subsystems are responsible for execution for

different supporting system applications like win32 and POSIX. These subsystems have their own API's (Application Programming Interface) system data and hardware is accessible to kernel mode layer of windows 2000. Operating system itself runs in the kernel mode. Environment subsystems run in user mode. The lowest of two layers nearest to the hardware are the kernel and Hardware Abstraction Layer (HAL) that is written in C and assembly language. Upper layers are written in C and are machine independent layers. Most of the drivers in windows 2000 are written in C or C++.

Kernel mode :-

The aim of kernel is to make the rest of the Operating system machine independent, hiding all the low-level details. Accessing the hardware using HAL kernel is responsible for generating higher-level abstractions.

Kernel also includes the code for thread scheduling. It also provides low-level support to two internal objects - control objects and dispatcher objects.

The entire executive area is written in C language and is architecturally independent and can be easily ported to machine.

Question 2(b)

List the important components of domain name servers. Also, explain how the domain name server is configured in LINUX operating system.

Important components of domain name server are as follows:

① DNS service
② Forward Master
③ Reverse Master
④ Slave Zones

Configuring Domain Name Server in Linux operating system:-

We can configure DNS in two modes in Linux operating system i.e., Command line mode and GUI mode (using Bind configuration Tool).

In order to configure DNS in Linux, first we must start the Bind configuration Tool by executing the following command.

[root@linux root]# redhat -config -bind

The configuration file for bind is /etc/named.conf.

click on New button and select Forward Master. Here, we have to enter the following details.

① Name : forward.example.com

② File name : forward.example.com.zone

③ contact : root@localhost

click on Add button to save the settings.

Now click on New button in Bind configuration Tool and select Reverse Master.

Enter the following information in Reverse Master zone.

① IP Address : 192.168.10.10

② contact : root@localhost

③ File Name : 10.10.168.192.in-addr.arpa.zone

click on Add to save the configuration.

The named service will take cognizance of the changes and they will take effect.