Midterm

Question #1 (10 pts)
Explain in your own words what the following script is attempting to do. Please do not describe what the code is doing. Write a summary of what the program is trying to do.

```
#!/bin/bash
ARGS=2
E_BADARGS=65

if [ $# -ne "$ARGS" ]
then
  echo "Usage: `basename $0` source destination"
  exit $E_BADARGS
fi

source=$1
destination=$2

find "$source" -depth | cpio -admvp "$destination"
exit 0
```

Question #2 (10 pts)
Explain in your own words what the following script is attempting to do. Please do not describe what the code is doing. Write a summary of what the program is trying to do.

```
#!/bin/bash

BADDIR=65                       # No such directory.
projectdir=/home/bozo/projects  # Directory to clean up.
cleanup_pfiles ()
{
  if [ ! -d "$1" ]  # Test if target directory exists.
  then
    echo "$1 is not a directory."
    return $BADDIR
  fi

  rm -f "$1"/*
  return 0   # Success.
}

cleanup_pfiles $projectdir

exit 0
```

Question #3 (20 pts)
A System Administrator would like to monitor the system's memory usage and be informed through email when the memory reaches a certain level. Write a script to monitor memory usage and send an e-mail when free memory drops below 1000 MB.

Question #4 (Customize add login id script – 60 pts)

The Linux command *useradd* allows a system administrator to create login accounts. The following is an example of how to use the command (must be in superuser mode);

useradd smithj –m -c "John Smith, Scripting Course" –u 1001 –g 1001 –s /bin/bash

The command above adds a login id called *smithj* to the Linux system, make the home directory for *smithj*, the owner is *John Smith* with comment included as *Scripting Course*, with User ID number (UID) 1001, Group ID (GID) number 1001, and setup the bash shell for user *smithj*.

Your Assignment
Customize and write a script to add new login id in an interactive mode. Your script should ask the user what Linux id to install, the user full name, what UID and GID to use (if nothing is entered for UID and GID, your Linux will use the default values), and what Linux shell to use (default should be setup as bash). Once you have all the values, your script will then implement the Linux *useradd* command to complete the task. Call your script *addloginid*.

This assignment requires super-user access to run your script. This assignment must be written using your Linux server that you have installed earlier as one of your assignments. If you did not install it, then you will not be able to do this assignment.

Your script MUST check all possible errors. The script will terminate if an error is encountered. Your script should check for the following possible errors:

a) Only superuser can run the script.
b) Duplicate Linux id should NOT be allowed.
c) Linux id should have a minimum of three characters.
   The shell selected should only be either c, ksh, sh, or bash.
d) User full name should not be blank.
e) Make sure your script sets up a default password (any password).
f) Make sure the id has a default .bash_profile file.
g) Any other possible errors you can think of? Make your script robust!

Submit your script with several test results. Include successful output and failure output. Demonstrate that you have done a thorough test on your script.