ULI101 Data Representation / File Permissions Practice

Instructions:

This handout is just for practice. It is the responsibility of the student to attend class to mark their own work in class when your professor takes up this exercise. You are NOT required to hand this practice sheet into your professor (keep it for future practice).

The answers to this handout will NOT be posted or emailed to students.

1. List the **number of digits** for the following numbering systems:
   - **Decimal - 10 (0-9)**
   - **Binary - 2 (0 or 1)**
   - **Octal – 8 (0-7)**
   - **Hexadecimal – 16 (0-F)**

2. Write a simple chart to show which values are represented for letter **A - F** for a hexadecimal number.

   A ---- 10

   B ---- 11

   C ---- 12

   D ----- 13

   E ----- 14

   F -----15

3. How many **binary** digits does 1 *octal* digit represent?

   1 Octal → 3 binary digits

4. How many **binary** digits does 1 *hexadecimal* digit represent?

   1 hexadecimal → 4 Binary digits

5. Use manual numbering conversion to complete the table displayed below.1

Decimal	Binary	Octal	Hexadecimal
101			
	11110011		
		56	
			AC

101 – 001100101 – 145 – 65

243 – 11110011 – 363 – F3

46 -- 00101110 – 56 – 2E

172 – 10101100 – 254 -- AC

6. Write the **chmod** command (using the *symbolic* method) to set "**pass-through**" permissions (eg. **r w x - - x - - x**) for your **home** directory using an **absolute pathname**. Also, write a Linux command to verify that permissions where set.
chmod u=rwx,go=x /home/dasoni4

ls -ld /home/dasoni4

7. Perform a binary to octal numbering conversion for the permissions: **r w x - - x - - x**
Write single Linux command to set "**pass-through**" permissions for your **home** directory but use the **absolute method** (i.e. **octal** numbers).

Binary – Octal

rwx - - x - - x

111 001 001

421 421 421

7 1 1

chmod 711 /home/dasoni4

8. Write a single Linux command to **add <u>read</u> permissions** for **same group members** for the **~/tests** directory. Use the *symbolic* method.

   chmod g+r ~/tests

9. Write a single Linux command to **remove <u>write</u> permissions** for **same group members** and **other group members** for the **~/projects** directory. Use the *symbolic* method.

   chmod go-w ~/projects

10. Write a single Linux command to set the permissions for the **~/assignments** directory to the following using the **absolute** method (i.e. octal numbers): **r w x r - x - - x**
    NOTE: Show your work to perform a **binary** to **octal** conversion.

    r w x r - x - - x

    3 binary – 1 octal

    1 1 1 101 0 0 1

    4 2 1 421 4 2 1

     7 5 1

    chmod 751 ~/assignments

11. Assume that you just issued the command:
    chmod u=rwx,go=x ~/linux/content
    What would be the new permissions for the **~/linux/content** directory?

    rwx --x --x

12. Assume that you just issued the commands:

```
umask 077
mkdir mydir
touch mydir/myfile.txt
```

    What would be the permissions for those **newly created directory and regular file**? (show your work)

    Directory Permissions :

7 7 7
0 7 7 –

---

700 -> Binary ?
1 octal = 3 binary
7 0 0
421 421 421
111 000 000
rwx - - - - - -

regular files text files :
666
077 –

600

6 0 0
421 421 421
110 000 000
rw- - - - - -