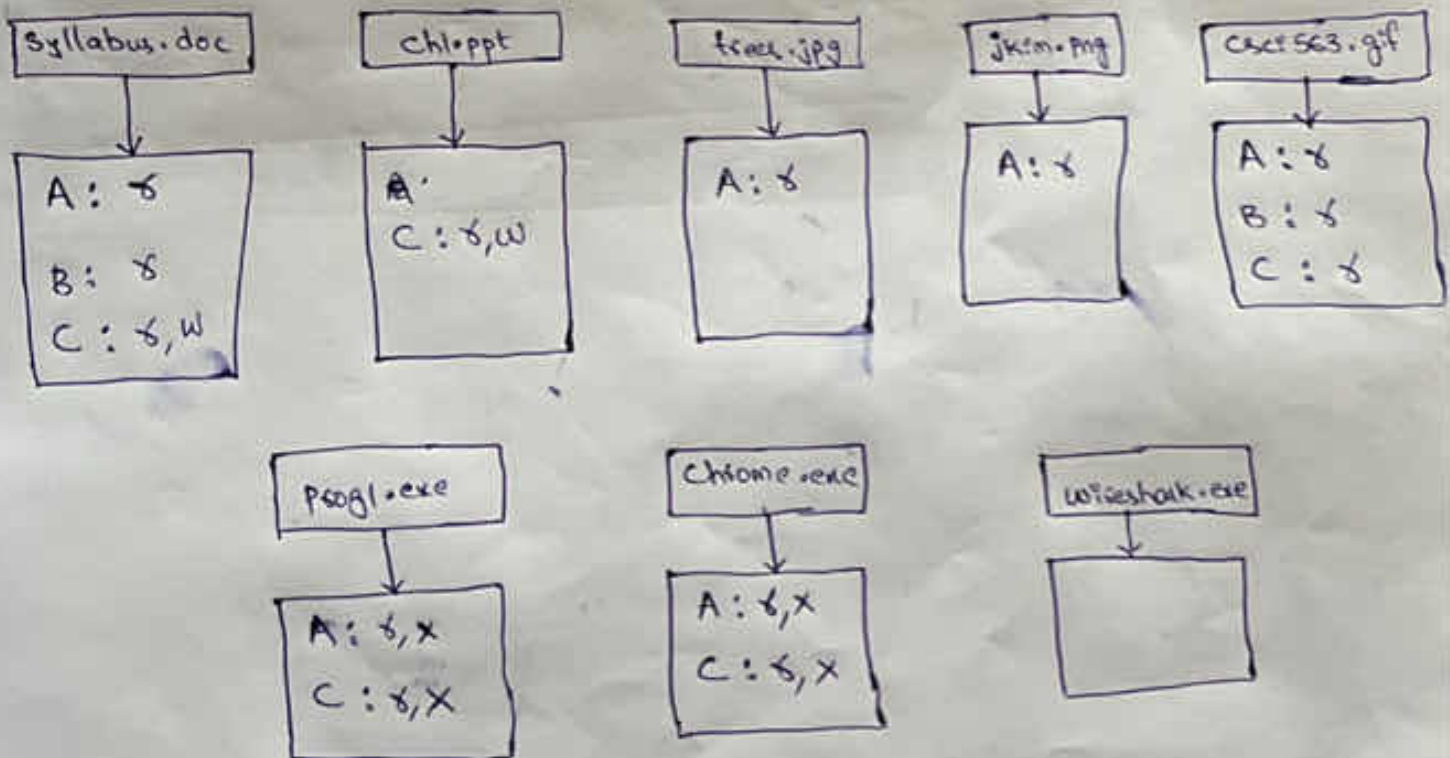## Problem – 1 (Access Control):

Given   Privileges : Read ('R'), Write ("W"), Execute ("X")

   Users : A, B, and C

a) Access Control Matrix:

	Syllabus.doc	chl.ppt	trees.jpg	Jkim.png	csc562.gif	Psogl.exe	Chrome.exe	Wireshark.exe
A	read		read	read	read	read, exec	read, exec	
B	read				read			
C	read, write	read, write			read	read, exec	read, exec	

b) Access Control Lists:

Syllabus.doc → A: 𝑟 / B: 𝑟 / C: 𝑟,w

chl.ppt → A: / C: 𝑟,w

trees.jpg → A: 𝑟

Jkim.png → A: 𝑟

csc563.gif → A: 𝑟 / B: 𝑟 / C: 𝑟

Psogl.exe → A: 𝑟,x / C: 𝑟,x

Chrome.exe → A: 𝑟,x / C: 𝑟,x

wireshark.exe →

Where   𝑟 = read , w = write,   x = execute

c) Are Capabilities List:

[A] →
Syllabus.doc : ᵳ ; trees.jpg : ᵳ ; jkim.png : ᵳ ;
Csci563.gif : ᵳ ; Prog1.exe : ᵳ,x ; chrome.exe : ᵳ,x

[B] →
Syllabus.doc : ᵳ ; csci563.gif : ᵳ

[C] →
Syllabus.doc : ᵳ,w ; ch1.ppt : ᵳ,w ; csci563.gif : ᵳ ;
Prog1.exe : ᵳ,x ; chrome.exe : ᵳ,x

Where ᵳ = read, w = write, x = execute

Problem 2 : Vernam Cipher :

Given

Letter	A	E	Y	M	O	R	H	L
Binary	000	001	010	011	100	101	110	111

a) Given message (M) = "MORAL"

 key (K) = "HELLO"

Vernam Cipher = Message (XOR) key.

MORAL :   011   100   101   000   111

HELLO :   110   001   111   111   100
          _____
          101   101   010   111   011   Corresponding
                                          Letters

 Cipher Text is : RRYLM

b) Given Cipher Text (C) = "HYMYR"

 key (K) = "HELLO"

plain Text = Cipher Text (C) (XOR) key (K)

HYMYR :   110   010   011   010   101

HELLO :   110   001   111   111   100
          _____
          000   011   100   101   001

 plain Text is : AMORE   Corresponding letters
                           from the table.