BIRZEIT UNIVERSITY

Key

Quiz one
Computer Security 432
Time: 30 mins

Student Name: _____ Student ID#: _____ Sec: _____

Question One
Mention the three factors of Authentication and give an example of each

Something You Know: password   3 Marks
                                   on factor
Something You Have: Tokens

Something You are : Biometrics   3 Mark
                                    on Example

Question Two
In a habituated environment, Is retinal authentication recommended.? Justify your answer.

No   Acceptability is low

2 Mark   2 Mark

Question Three
How many combinations do we need for the following cases?
A) 6-character password with exactly one (capital K) in it

$$6 * 93^5$$ 2 Marks

B) 6-character password with at least one special and capital.

All — No special — No capitals + Those Subtracted
                                   Twice
                                   (No capital and
                                    No special

$$94^6 - (94-32)^6 - (94-26)^6 + (94-26-32)^6$$ 4 Marks

$\quad\quad\quad 62 \quad\quad\quad\quad 68 \quad\quad\quad\quad 36$

C) 6-digit PIN code where exactly four digits are different.

$$\binom{6}{2} * 10 * 9 * 8 * 7 * 6$$

6 Mark

Question Four

Given the following distance score tables that represent an experiment of hand geometry authentication

	Template 1	Template 2	Template 3	Template 4
User 1	20.17	20.32	23.66	34.77
User 2	20.98	17.18	23.56	35.44
User 3	44.45	29.08	20.78	20.42
User 4	37.89	34.55	32.67	14.23

A) what is the FMR for t = 20.78, and what is the FNMR at this point?

$$FNMR = 0/4 \quad ① \qquad FMR = 2/12 \quad ①$$

B) if we want the FNMR to be zero, what is the most appropriate Value of threshold t and what is the value of FMR at this point?

$$t = 20.78 \quad ① \qquad FMR = 2/12 \quad ①$$

c) What is the general relation between t and the FNMR and FMR once t increases and then when t decreases?

T increases   FNMR ↓   FMR ↑   2

T decreases   FNMR ↑   FMR ↓   2