# CS 351 SECTION 3
# SOLUTIONS OF QUIZ #1

**Reminder**: There might be different ways to solve the questions below.

Date Given: October 1, 2010

No of plates: 10,
No of tracks/surfaces: 500,
No of bytes/track: 15,000 bytes,
Block size: 1500bytes

In our calculations, we assume that 1K = 1000, 1MB = 1,000,000

(I) One read/write head per surface
(II) Two read/write head per surface

a) No of cylinders?
= (No of tracks per surface) * (No of rw head per surface)

(I) 500/1 = 500 cylinders
(II) 500/2 = 250 cylinders

b) Cylinder capacity?
= (Track capacity) * (No of tracks per cylinder)
= (Track capacity) * (No of magnetizable surfaces) * (No of rw head per surface)

(I) 15,000 * 20 * 1 = 300 KB
(II) 15,000 * 20 * 2 = 600 KB

c) Disk capacity?
= (No of cylinders) * (Cylinder capacity)

(I) 500 * 300 KB = 150 MB
(II) 250 * 600 KB = 150 MB

d) No of blocks/cylinder?
= (Cylinder capacity) / (Block size)

(I) 300,000 / 1500 = 200 blocks
(II) 600.000 / 1500 = 400 blocks

# CS 351 SECTION 1 & 2
# SOLUTIONS OF QUIZ #1

Date Given: September 28, 2010

n = 200,000 records
R = 100 char
B = 2400 char
btt = 0.4 ms
ebt = 0.5 ms
r = 2 ms
s = 4 ms

(I) Each bucket contains 1 block
(II) Each bucket contains 10 block

a) How many buckets in the file?
b = (No of total chars) / (Capacity of a bucket)
b = n * R / B * (No of block per bucket)

(I) 200,000 * 100 / 2400 * 1 = 8333.3
(II) 200,000 * 100 / 2400 * 10 = 833.3

b) File processing time?
t = (No of blocks) * (ebt)
(No of blocks) = (200,000 * 100 / 2400) = 8333.3

(I) and (II) 8334 * (0.5) = 4167 ms